M. Deineko

Public Education in the USSR

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НАРОДНОЕ ОБРАЗОВАНИЕ В СССР

На английском языке

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Introduction

In Soviet time the peoples of the Soviet Union have achieved great successes in state, economic and cultural construction. Under the leadership of the Communist Party the Soviet people have built socialism, have transformed their formerly backward country into an advanced industrial power and are now successfully building a communist society.

The system of public education developed in the U.S.S.R. played an important part in the building of socialism. Extensive work aimed at reorganising the school and training qualified personnel for all branches of the national economy was begun immediately after the victory of the Great October Socialist Revolution.

In tsarist Russia almost 70 per cent of the men and about 90 per cent of the women were illiterate. Four-fifths of all children and adolescents did not attend school. The school system was built on class principle. Two systems were actually in operation in the country: one offered the children of landlords, capitalists and officials a secondary and higher education; the other served the children of the working people and taught them only the three R's. The schools were taught in Russian; the native languages in the outlying national

districts were very much neglected. Women's educational standards were very low.

Firmly establishing the power of the working people and abolishing exploitation of man by man the October Revolution provided unlimited opportunities for the all-round development of the masses of the people and placed all achievements of culture at their service.

The numerous types of schools which existed in tsarist Russia were replaced by a single labour school taught in the native language. The school was separated from the church. Free universal four-year elementary education was introduced in rural areas in 1930 and universal seven-year schooling in towns and workers' settlements. Universal compulsory seven-year schooling began to be introduced all over the country in 1949 (4 years after the end of the Great Patriotic War of the Soviet Union). Compulsory universal eight-year schooling began to be introduced in 1958 and, in connection with it, the complete general secondary educational school course was increased from 10 to 11 years.

In Soviet time the number of schools and other educational establishments, as well as the contingents of pupils therein, has considerably increased. Whereas in the 1914-15 school year the 124,000 schools had an enrolment of 9.5 million, in the 1963-64 school year there were over 227,000 schools with an attendance of more than 44 million. The special secondary schools of pre-revolutionary Russia had an enrolment of 54,000, whereas in the 1963-64 school year the figure was 2.9 million. In the 1914-15 academic year there was a total of 105 schools of higher learning on the territory of Russia with a student body of 127,000. In the 1963-64 academic year the country's 741 schools of higher learning had a contingent of 3.3 million students. Some 330,000 specialists, including 125,000 engineers, were graduated from the higher schools in 1963 alone.

The Soviet Union has surpassed all capitalist countries, including the U.S.A., with respect to the number of students and training of specialists. In 1960 the U.S.S.R. numbered four times as many students as Britain, F.R.G., France and Italy taken together, although the total population of these countries almost equals that of the Soviet Union. Today over 64 million Soviet people are engaged in some form of study, i.e., every third Soviet citizen studies (excluding children of pre-school age).

One of the most important gains of the Soviet system is that it has abolished national oppression, has ensured the equality of all the peoples of the multi-national Soviet state and has provided conditions for their fraternal co-operation. The peoples of the former outlying national districts of the Russian empire have been given every opportunity for all-round economic and cultural development. Forty-eight nationalities who formerly had no written language have now developed their written languages.

The Central Asian republics may serve as the most vivid example of the flourishing of culture and advance in public education. Whereas before the Revolution only 0.5 per cent Tajiks, 0.6 per cent Kirghiz, 0.7 per cent Turkmens and 1.6 per cent Uzbeks were literate, today there is not one illiterate person in the Tajik, Kirghiz, Turkmen and Uzbek Soviet Socialist republics. A numerous national intelligentsia has grown up in these republics.

Highly skilled specialists in all branches of the national economy and culture have come into existence in the country in Soviet time. The creative quests and selfless labour of the Soviet people are embodied in such remarkable scientific and technical achievements as the artificial earth satellites and spaceships, the atom-powered ice-breaker and atomic power stations, fast jet-propelled passenger airliners and most intricate com-

puters, semi-conductor instruments and many other perfect machines and apparatus. The Soviet intelligentsia has made considerable achievements in literature, music and the fine arts.

The school has undoubtedly made a big contribution to all these achievements.

All through the course of its development the school has played an important role in socialist construction by training active and conscious members of the new society. The Soviet school has played a decisive part in carrying out the cultural revolution in the country.

The entrance of the U.S.S.R. upon a new stage of development—the period of all-round building of communism—has necessitated further improvement of the system of public education.

The new Programme of the Communist Party of the Soviet Union emphasises that the greater the consciousness of the members of society, the fuller and more extensive is their creative activity in the development of communist forms of labour and new social relations among the people. That is why training of communist-minded and highly educated people capable of both physical and mental labour for active work in various spheres of public and state life, as well as in the fields of science and culture, is one of the most important objectives of communist construction. The school plays a leading role in forming the new man.

The rapid technical progress in all branches of the national economy, which characterises the period of communist construction, makes increasingly higher demands on the general education and skills of the great mass of workers and collective farmers. Mechanisation, automation and chemisation of production, extensive use of electronics and computers, greatest possible development of electrification have radically changed the character of labour. The essential differences between

physical and mental work are being eliminated. The labour of workers and collective farmers is increasingly coming to resemble that of engineers, technicians and agronomists. This has put before the school the task of improving the general, polytechnical and vocational training of the youth.

Modern production based on the latest achievements of science and engineering requires a higher level of theoretical training and better practical knowledge also of the graduates of special higher and secondary schools.

The system and content of public education had to be modified in order to link training and education of the rising generation as closely as possible with life and productive labour for the good of society.

The Law on Establishing Closer Links Between School and Life and on the Further Development of Public Education in the U.S.S.R. was passed in 1958. Reorganisation of the school on the basis of this law will enable it to play a more active role in the construction of a communist society in the country.

Abroad the interest in the Soviet school has lately appreciably increased; more and more foreign delegations visit the U.S.S.R. for the purpose of studying the country's experience in training and educating children and youth, training specialists, building schools, etc. In 1959-63 alone the Soviet Union was visited by delegations of educational workers of some 40 countries, including India, the German Democratic Republic, the U.S.A., the Republic of Cuba, Britain, France and the Republic of Mali. The foreign guests visit various educational establishments and familiarise themselves with the organisation of research in pedagogics and the reorganisation of the Soviet school on the basis of the Law on Establishing Closer Links Between School and Life and on the Further Development of Public Education.

Soviet educational workers, in their turn, study the

organisation of education in many countries. The international relations of Soviet educators and educational establishments are expanding. The relations are maintained through personal contacts, study of textbooks and scientific materials, exchange of experience in educational work and research, participation in international conferences, consultations, symposiums, etc.

The practical importance of the exchange of pedagogical information is growing with each passing year. It makes it possible to take greater advantage of the positive experience of other countries in the field of education and contributes to further development of national education and to improvement of mutual understanding among nations.

We hope that the book *Public Education in the U.S.S.R.* we are offering for the reader's consideration will also serve these noble aims. It contains information on the educational standards of the population of the Soviet Union, discloses the aims and objectives of training and education of the rising generation, offers a general description of the system of education and its various links, and deals with the essence and direction of the reorganisation of the school on the basis of the December 24, 1958, Law on the School. Special chapters are devoted to teacher-training and pedagogics, children's extra-school establishments, and cultural and educational institutions for adults.

The statistical material contained in the book gives an idea of the achieved standards and dynamics of growth of education in the U.S.S.R.

If the book helps the reader to gain an insight into the special features of organisation of Soviet education and into the ways of its development, and if it gives the reader new information on the Soviet school, its aims, forms and methods of work, we shall consider our task accomplished.

Educational Standards of the Population in the U.S.S.R.

The most complete and detailed information on the state of public education in a country is furnished by a census. In the U.S.S.R. a general census was conducted in 1926, 1939 and 1959. We shall use the information furnished to characterise Soviet public education at the different stages of its development.

GENERAL INDICES OF THE EDUCATIONAL STANDARDS OF THE POPULATION IN THE U.S.S.R.

The 1959 general census in the Soviet Union revealed the educational standards of the entire population of the country, as well as those of various social groups and occupations, men and women, townspeople and countryfolk, etc. The following table shows some indices (per thousand population).

The Soviet Union is one of the leading countries of the world in general educational standards of the population while in a number of indices and rates of growth it has greatly outstripped all the other countries.

Education	Total	Men	Women	In town	In country
Higher	3,778	1,933	1,845	3,170	608
Incomplete higher	1,738	820	918	1,332	406
Special secondary	7,870	3,414	4,456	5,446	2,424
General secondary	9,936	4,408	5,528	7,426	2,510
Incomplete secondary (graduates of seven-year schools or persons with more than seven years of schooling)	35,386	17,070	18,316	20,254	15,132
Total	58,708	27,645	31,063	37,628	21,080

LITERACY OF THE POPULATION

The following summary table compiled on the basis of the information furnished by the 1926, 1939 and 1959 censuses reflects the growth of literacy among the Soviet population from 9 to 49 years of age.

	Percentage of literate people from 9 to 49 years of age		
	Men	Women	Both sexes
Total population			
1926	71.5	42.7	56.6
1939	95.1	83.4	89.1
1959	99.3	97.8	98.5
Urban population			
1926	88.0	73.9	80.9
1939	97.6	91.0	94.2
1959	99.5	98.1	98.7
Rural population			
1926	67.3	35.4	50.6
1939	93.7	79.2	86.3
1959	99.1	97.5	98.2

It should be noted that from 1897 to 1959 the literacy of the population uncreased as follows: urban population —from 65.5 to 98.7 per cent, rural population—from 21.7 to 98.2 per cent, women—from 9.6 to 97.5 per cent; the total increase in literacy was from 26.3 to 98.5 per cent.

The last census showed 1,929,000 people, or 1.5 per cent of the total population, to be illiterate. A control check-up revealed, however, that many of these had at one time attended school but considered themselves insufficiently literate, while some could not read or write as a result of some chronic disease or physical defects. The Soviet Union has thus essentially become a country of total literacy.

HIGHER-THAN-ELEMENTARY EDUCATION

In the 1897 census the educational standards of the population in Russia were characterised by the number of persons with a higher-than-elementary education which was considered to be four years of general educational schooling. At that time there were 1.4 million such people. In 1959 there were 71.2 million people in the U.S.S.R. with a higher-than-elementary education, i.e., 346 per 1,000 population for the country as a whole and 249 per 1,000 rural population (in 1897—11 and 3 respectively). Of this number, 13.4 million people had a higher, incomplete higher or special secondary education, and 45.3 million people a general secondary or incomplete secondary education. Moreover, 12.5 million people had 5 or 6 years of schooling. Many working youths and adults continued studying by attending evening schools or taking general educational courses by correspondence. During the 20 years that elapsed

between 1939 and 1959 the number of citizens with a higher-than-elementary education increased 3.7-fold.

SECONDARY AND HIGHER EDUCATION

According to the 1959 census, the U.S.S.R. numbered 19,544,000 people with a complete secondary education, including the 7,870,000 with a special secondary education and 9,936,000 with a general secondary education. The 1,738,000 people with an incomplete higher education were referred by the census to the same category.

In 1959 there were 3,778,000 people with a higher education.

In 20 years (1939-59) the number of Soviet citizens with a secondary education increased 3.7-fold and with a higher education—3.2-fold.

On January 1, 1963, the total number of people with a higher, incomplete higher and secondary (complete and incomplete) education was much greater than the number revealed by the 1959 census and amounted to 68.6 million, or 308 per 1,000 population.

EDUCATION IN THE UNION REPUBLICS

Considerable success in the development of public education was attained in all the fifteen Union republics of the U.S.S.R. The following data furnished by the 1959 census show the distribution of the people in the various Union republics (including housewives, servicemen and pensioners) with a higher, secondary or incomplete secondary education.

U.S.S.R. and Union republics	People with education (in thousands)		Number per thousand population		
	Higher	Secondary and incomplete secondary	Higher education	Secondary and incomplete secondary education	Total
U.S.S.R.	*3,777.5*	*54,929.6*	*18*	*263*	*281*
Including:					
R.S.F.S.R.	2,265.9	30,903.6	19	263	282
Ukrainian S.S.R.	715.4	11,972.7	17	286	303
Byelorussian S.S.R.	95.7	1,814.0	12	225	237
Uzbek S.S.R.	104.9	1,896.7	13	234	247
Kazakh S.S.R.	114.0	2,215.2	12	239	251
Georgian S.S.R.	153.4	1,270.7	38	315	353
Azerbaijan S.S.R.	77.2	967.3	21	261	282
Lithuanian S.S.R.	35.4	476.1	13	175	188
Moldavian S.S.R.	29.5	534.6	10	186	196
Latvian S.S.R.	44.4	722.2	21	344	365
Kirghiz S.S.R.	27.2	470.3	13	227	240
Tajik S.S.R.	20.7	425.6	10	214	224
Armenian S.S.R.	48.8	508.1	28	289	317
Turkmen S.S.R.	19.8	388.4	13	256	269
Estonian S.S.R.	25.2	364.1	21	304	325

The following comparisons attest the increase in the number of people with a higher or secondary education in the Union republics. Whereas in the U.S.S.R. as a whole the number of people with a higher education increased 3.2-fold in 1939-59, in the Kirghiz S.S.R. it increased 8.4-fold, the Tajik S.S.R.—6.9-fold, in the Uzbek S.S.R.—5.3-fold, the Turkmen S.S.R.—4.9-fold, the Kazakh S.S.R.—4.2-fold, etc. The number of people with a secondary education increased in the U.S.S.R. as a whole 3.7-fold, the Tajik S.S.R.—10.6-fold, the Kirghiz S.S.R.—9.9-fold, the Uzbek S.S.R.—7.7-fold, the Turkmen S.S.R.—6.7-fold. The increase in the number of engineers, technicians and agronomists in the Central

Asian republics and Kazakhstan was twice as high as in the U.S.S.R. as a whole, the increase in the number of teachers and other cultural and educational workers was almost three times as high, that in physicians and other medical personnel was 2.5 times and in the number of scientific workers more than three times as high.

The total number of specialists with a higher education engaged in the national economy of the U.S.S.R. in the beginning of 1963 was 4,050,000, or 30 times that of 1913. In the Union republics the specialists with a higher education engaged in the national economy are distributed as follows (in thousands):

U.S.S.R. and Union republics	January 1, 1941		January 1, 1963	
	Total	Including engineers	Total	Including engineers
U.S.S.R.	*909.0*	*289.9*	*4,049.7*	*1,325.1*
Including:				
R.S.F.S.R.	527.6	187.7	2,354.9	871.5
Ukrainian S.S.R.	217.7	60.9	789.8	247.0
Byelorussian S.S.R.	27.7	4.9	126.6	27.1
Uzbek S.S.R.	19.9	5.3	130.4	25.3
Kazakh S.S.R.	16.8	4.2	153.6	40.1
Georgian S.S.R.	33.9	7.8	117.8	29.8
Azerbaijan S.S.R.	20.1	6.5	79.8	19.6
Lithuanian S.S.R.	7.2	2.4	44.0	11.2
Moldavian S.S.R.	5.4	0.8	39.3	6.5
Latvian S.S.R.	9.8	3.4	48.0	12.7
Kirghiz S.S.R.	3.7	0.8	36.0	6.2
Tajik S.S.R.	3.5	0.7	28.8	4.8
Armenian S.S.R.	7.3	1.4	47.0	11.8
Turkmen S.S.R.	3.6	1.3	26.0	4.1
Estonian S.S.R.	4.8	1.8	27.7	7.4

No less significant are the data characterising the development of special secondary education in the U.S.S.R.

In the Union republics the specialists with a secondary education engaged in the national economy are distributed as follows (in thousands):

U.S.S.R and Union republics	January 1, 1941		January 1, 1963	
	Total	Including technicians	Total	Including technicians
U.S.S.R	*1,492.2*	*320.1*	*5,906.1*	*2,292.7*
Including:				
R.S.F.S.R.	915.8	211.6	3,625.7	1,539.4
Ukrainian S.S.R.	295.4	58.5	1,110.0	411.9
Byelorussian S.S.R.	59.9	9.6	190.7	56.3
Uzbek S.S.R.	34.7	6.0	154.4	46.3
Kazakh S.S.R.	35.5	7.2	251.7	82.2
Georgian S.S.R.	33.2	5.4	94.3	20.4
Azerbaijan S.S.R.	27.7	5.1	87.7	24.0
Lithuanian S.S.R.	14.0	2.9	61.9	16.6
Moldavian S.S.R.	11.1	0.9	58.5	12.6
Latvian S.S.R.	18.4	4.4	67.9	23.6
Kirghiz S.S.R.	7.3	1.2	48.6	13.3
Tajik S.S.R.	7.0	1.0	38.8	9.3
Armenian S.S.R.	12.1	1.6	37.9	11.3
Turkmen S.S.R.	10.3	2.2	36.9	11.2
Estonian S.S.R.	9.8	2.5	41.1	14.3

By December 1, 1962, the number of junior specialists employed in the Soviet national economy reached 10,800,000.

The availability of trained specialists in the national republics is one of the most important factors determining the successful development of the Soviet national economy and culture.

In 1959 the U.S.S.R. numbered 36.7 million women (an average of 320 per 1,000) with a higher-than-elementary education. Of the 3.8 million people with a higher education 1.8 million (49 per cent) were women; of the people with a secondary or incomplete secondary education 29 million (53 per cent) were women.

Particularly great achievements in raising the educational standards of the women were made in the Central Asian and Transcaucasian republics where only very few women had been literate before the Revolution. In 1959 there were 206 women with a secondary and 10 with a higher education per 1,000 women in the Uzbek S.S.R., 205 with a secondary and 11 with a higher education in the Kirghiz S.S.R., 237 with a secondary and 10 with a higher education in the Turkmen S.S.R., 231 with a secondary and 16 with a higher education per 1,000 in the Azerbaijan S.S.R., etc.

From 1939 to 1959 the number of women with a higher education increased in the Soviet Union as a whole almost fivefold (in the rural areas—6.4-fold), with a secondary and incomplete secondary—4.4- and 6.6-fold respectively.

The high educational standards have enabled the Soviet women to become active builders of the communist society. According to the data of December 1, 1962, the U.S.S.R. numbered 1,485,000 women physicians and other medical workers, 1,983,800 women teachers and other educational workers, 2,121,400 women engineers, technicians, agronomists and livestock experts, 177,700 women scientific workers, more than 26,000 women writers, etc. A total of 2,132,500 women with a higher education and 3,723,000 women with a secondary education were engaged in the Soviet national economy.

EDUCATION OF THE URBAN AND RURAL POPULATION

In most countries of the world the educational standards of the urban and rural population sharply differ. In the U.S.S.R., since universal compulsory education has been carried into effect, this disparity is being successfully overcome. Today more than 25 million citizens with a higher-than-elementary education (249 per 1,000 population) live and work in rural areas. According to the 1959 census, this number includes the 608,000 citizens with a higher education and 20,472,000 with a secondary education, or 6 and 188 per 1,000 population respectively. It is characteristic that the educational standards of the rural population are rising faster than those of the urban population. For example, since 1939 the number of people with a higher education per 1,000 population has increased 3.3-fold in the rural areas and twofold in the urban communities, while the number of people with a secondary or incomplete secondary education has increased 5.1-fold and 2.1-fold respectively.

ADVANCED CULTURAL AND TECHNICAL STANDARDS OF THE WORKING PEOPLE

In the Soviet Union the cultural and technical standards of the masses of working people are continuously rising.

Before the Revolution there were no workers or peasants with a secondary or, especially, higher education. In 1926 only about 1.5 per cent and in 1939—4.3 per cent manual workers had a secondary education, while in 1963 there were already 44 per cent workers and 26 per cent collective farmers with a higher or secondary education. At the same time the educational standards of the

machine operators and other skilled agricultural workers quite compare with those of the industrial workers.

From 1939 to 1959 the educational standards of workers, collective farmers and employees have radically changed. This is attested by the table showing the number of workers, collective farmers and employees with a secondary and higher education per 1,000:

	1939	1959	Increase
Total population	83	281	3.4-fold
Mainly manual workers .	43	316	7.3-fold
Workers	82	386	4.7-fold
Collective farmers (excluding managing personnel and specialists)	15	212	14.1-fold
Brain workers	498	884	1.8-fold

Still more significant than the average figures are the data on the educational standards of people engaged in various occupations. The following are the number of people (per 1,000) with a secondary and higher education (1959): modellers—690, milling-machine operators —683, turners—667, weavers—533, painters—411, masons—348, etc. Among each thousand milkmaids (cattle-farm workers and poultry-breeders) 204 had a secondary or higher education, shepherds (herdsmen, drovers)—146. This is about 40 times the number of 1939. The high educational standards of Soviet workers, collective farmers and employees enable them to take an active part in improving social production.

All these figures denote, not only the advance in the general educational standards and qualifications of workers and peasants, but also the important changes leading to elimination of the existing differences between mental and manual work.

Organisation of Public Education in the U.S.S.R.

Every state organises education and develops a system of public education in accordance with its ruling class interests, its historical, economic and cultural peculiarities and traditions.

The Soviet people are building a communist society under the leadership of the Communist Party of the Soviet Union. As one of the main objectives of communist construction in the U.S.S.R. the Communist Party of the Soviet Union has advanced that of educating versatile people who harmoniously combine spiritual wealth, moral purity and physical perfection. An active role in attaining this objective is played, in addition to educational institutions, by mass organisations of the working people—the All-Union Leninist Young Communist League (Komsomol) which conducts educational work among youth (from 14 years of age) and supervises the Young Pioneer organisation of children and adolescents (10-14 years of age), trade union organisations of factory and office workers, co-operative organisations which unite the collective-farm peasantry, etc.

The leading principle in training versatile people in the U.S.S.R. is combining their training and education with productive labour.

Mastery of the fundamentals of science and the arts plays an important part in man's all-round development. This is necessary, not only because science plays a leading role in the life of society and in modern production, but also because in the process of acquiring knowledge man develops his cognitive abilities and forms a scientific world outlook.

An important means to man's all-round development and one of the necessary conditions for abolishing the essential differences between mental and manual labour at the time of continuous progress in science and engineering is polytechnical education which familiarises man with the basic principles of modern production processes and teaches him the skills of handling the instruments of production. General and polytechnical education combined with production training lays the foundation for vocational education of the youth and offers every opportunity to discover and develop man's abilities and endowments.

Formation of man's moral concepts and convictions and elaboration of behaviour habits and practices plays a most important part in his all-round development.

The ethical norms of Soviet society have always been humane and noble and have objectively coincided with the interests of all of progressive humanity. They form the basis of the moral code of builders of communism, which is formulated in the Programme of the Communist Party of the Soviet Union and in the spirit of which the moral education of the youth is conducted in the U.S.S.R. The following are some of the code's rules:

devotion to the communist cause; love of the socialist Motherland and of the other socialist countries;

conscientious labour for the good of society—he who does not work, neither shall he eat;

concern on the part of everyone for the preservation and growth of public wealth;

a high sense of public duty; intolerance of actions harmful to the public interest;

collectivism and comradely mutual assistance; one for all and all for one;

humane relations and mutual respect between individuals—man is to man a friend, comrade and brother ;

honesty and truthfulness, moral purity, modesty, and unpretentiousness in social and private life;

mutual respect in the family, and concern for the upbringing of children;

an uncompromising attitude to injustice, parasitism, dishonesty, careerism and money-grabbing;

friendship and brotherhood among all peoples of the U.S.S.R.; intolerance of national and racial hatred;

an uncompromising attitude to the enemies of communism, peace and the freedom of nations;

fraternal solidarity with the working people of all countries, and with all peoples.

Organically linked with general education, vocational training and moral education is physical education—proper physical development and health-building—of the young generation.

An inalienable part of man's all-round development is his aesthetic education aimed at elaborating an ability to understand and appreciate the beauties of nature and human relations, and at developing the artistic faculties of the youth.

MOST IMPORTANT FEATURES AND PRINCIPLES OF THE SYSTEM OF EDUCATION

According to the Constitution of the U.S.S.R. all Soviet citizens have the right to education. This right is ensured by universal compulsory eight-year schooling, extensive development of a network of secondary and

higher schools, equal territorial distribution of schools of various types and purposes, existence of evening and correspondence schools, free tuition and a system of state grants, instruction in the native language, and organisation of free vocational, technical and agronomic training in factories and on state and collective farms.

The most important feature of the Soviet system of education is its true democracy. All its links—from the kindergarten to the higher school—serve the interests of all the people and not of any separate classes or social groups. Democracy permeates the activities of all educational and cultural institutions without exception, manifesting itself in the relations between the teachers and pupils, in the practice of appointing leading personnel and in the general trend of training and education.

The Soviet system of education establishes organic ties between general, polytechnical and vocational education and the participation of the youth in the production of material and spiritual values. Further possibilities of acquiring a secondary and higher education without discontinuing work give the workers of town and country every chance of raising their educational and technical standards to those of engineers, technicians, agronomists and zootechnicians.

The system of public education in the U.S.S.R. is based on the following principles:

(1) *The school and all other educational establishments are state institutions.*

In the Soviet Union all schools—general educational, special secondary and higher—are maintained and supervised by the state.

(2) *The school is unified and continuous through all links of public education.*

All links of schooling are interconnected. They organise their work according to a single plan which precludes

the existence of dead-end schools that make it impossible to go on to the next educational stage.

(3) *The school is universal, free and accessible to all.*
In the U.S.S.R. there are no restrictions (racial, national, etc.) to entering any school, including schools of higher learning. The tuition in all general educational, higher and special secondary schools is free.

(4) *The school and other educational and cultural institutions are separated from the church and are absolutely secular.*
A Government Decree of January 21, 1918, separated the church from the state and the school from the church. The teaching of religious dogmas has been excluded from the curricula of all state educational establishments.

(5) *All peoples of the U.S.S.R. have equal rights to be instructed in their native language.*
In the schools of all types the peoples of the U.S.S.R. are instructed in their native language. A culture socialist in content and national in form is developing in all the republics of the Soviet Union.

(6) *Men and women have equal rights to education.*
This equality is guaranteed by coeducational practice at all stages of education, equal access to all branches of education and, lastly, equal rights to those with an equal education.

(7) *The school and other educational institutions maintain close contact with the mass organisations of the working people and the general public* which display great concern for the training and education of the children and youth, and in this respect render all possible aid to the state and the Communist Party.

PRESENT SYSTEM OF EDUCATION IN THE U.S.S.R.

The school system operating in the U.S.S.R. at the present time is based on the Law on Establishing Closer Links Between School and Life and on the Further Development of Public Education adopted by the U.S.S.R. Supreme Soviet on December 24, 1958.

The Law is aimed at improving the work of the secondary and higher schools so that they meet the requirements of all-round construction of communism in the U.S.S.R., fill the gap between education and life, and ensure training of versatile people ready for work psychologically and practically. To achieve these aims the law envisages reorganisation of the structure of the secondary school, specifies the aims and objectives of all types of educational establishments and indicates the ways of improving the content and methods of training and educating the children and youth.

The law attaches paramount importance to preparing the rising generation for life, for socially useful work. It reads that "from the age of 15-16 all youths must engage in socially useful work within their powers and all their subsequent training must be connected with productive labour in the national economy". At the same time it implies, not the economic effect of the participation of schoolchildren and students in the labour of the people, but its educational influences on them.

Universal compulsory seven-year schooling has been replaced by universal compulsory eight-year schooling, in virtue of which the complete course of training in the general educational secondary school has been increased to 11 years.

Secondary education is divided into two stages—grades 1-8 and 9-11. During the second stage the gen-

eral and polytechnical education is combined with vocational training. To ensure the entire rising generation equal and real opportunities of receiving a complete secondary education, various types of secondary educational establishments have been set up within the framework of the unified school with due regard for the young people's requirements and interests.

In conformity with the 1958 Law the following system of public education has been established in the U.S.S.R.*

Pre-school education: kindergartens for children of 3-7 years of age, combined institutions—nursery school and kindergarten—for children from 3 months to 7 years of age, and all-year playgrounds.

School education: a) schools of the first stage of secondary education—eight-year incomplete secondary general educational polytechnical schools of universal compulsory education for children from 7 years of age;**

b) schools of the second stage of secondary education giving the right of admission to higher schools;

secondary general educational polytechnical schools with production training comprising three grades (the 9th, 10th and 11th years of schooling) in which the pupils are given a secondary education and vocational training for work in one of the branches of the national economy or culture;***

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* Each link of the Soviet system of education is described in detail in special chapters.

** Small communities may have so-called elementary schools with only the first four grades of eight-year schools.

*** Rural eight-year and secondary schools have boarding facilities for pupils who live far from school. These facilities are supported by the state, the children's parents paying only for the children's board. In the areas of the Extreme North, deserts and highlands boarding-school children are completely supported by the state.

evening (shift, seasonal) secondary general educational schools also comprising the three senior grades (the 9th, 10th and 11th years of schooling) in which, the young people working in the national economy after graduation from an eight-year school receive a secondary education and improve their vocational training without discontinuing work. As a temporary measure, evening (shift, seasonal) schools for young workers and peasants comprising the senior grades of the eight-year school have been retained for persons who have not completed their eight years' schooling; secondary correspondence schools have been set up for persons unable regularly to attend evening (shift, seasonal) schools.

The institutions of school education include the boarding-schools, which resemble the eight-year or secondary schools with production training, and prolonged-day schools.*

There are also special secondary general educational schools for children and adolescents particularly endowed with scientific, musical or artistic abilities.

For children physically below par there is a network of forest sanatorium and health-building schools situated in favourable natural surroundings. Special schools have been set up for children suffering from various psychophysical defects.**

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* The former orphans' homes are now being transformed into boarding-schools.

** Schools for deaf-mutes and deaf children have a 12-year course of study during which the children learn to speak and receive eight years of general schooling. The course of study in schools for blind children is one year longer than it is in the corresponding general educational schools.

Auxiliary schools for mentally retarded children have an eight-year course of study during which they offer their wards an education approximately equivalent to the first four grades

Extra-school training and education: Young Pioneer palaces and houses, technical and tourist stations, young naturalists' stations, etc., which conduct various extra-school work with schoolchildren.

Vocational-technical education:

a) day and evening urban vocational-technical schools with 1-3-year courses of studies;

b) rural vocational-technical schools with 1-2-year courses of studies.

Both types of school are based on eight years of general education and are aimed at training efficient and technically skilled industrial and agricultural workers.

After eight years' schooling young people may also receive vocational training at special courses and by group or individual apprenticeship.

Special secondary education: technical and other daytime, evening and correspondence special secondary schools with 3-4-year courses of studies offering a general secondary and special education.

Higher education: universities, academies, technical, agricultural, pedagogical, medical institutes and other higher daytime, evening and correspondence schools with 5-6-year courses of studies.

The new system of school education established in the U.S.S.R. by the Law of 1958 may be presented by the following diagram:

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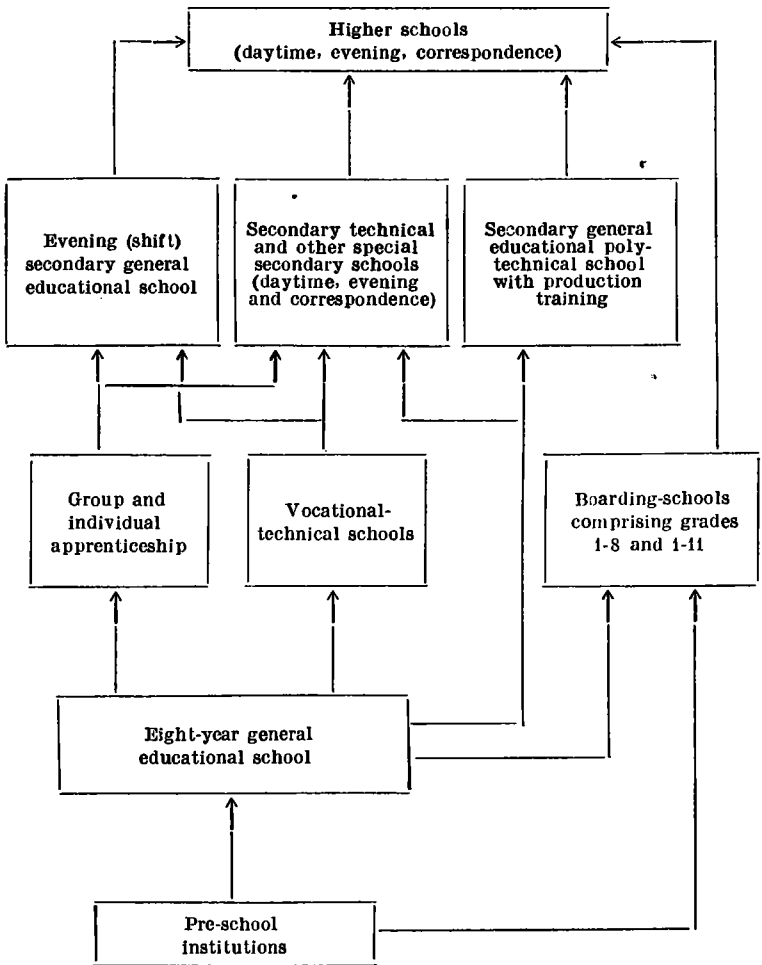
of the eight-year school. All special schools also offer training in some vocation.

The schools for deaf-mutes, blind and mentally retarded children are usually boarding-schools where the children are completely supported by the state.

Severely ill, bed-ridden children are taught individually at home, for which purpose the departments of public education allocate special funds used for paying the teachers and defraying other educational expenses.

Diagram of the School System Established by the Law of December 24, 1958


Higher schools (daytime, evening, correspondence)
Evening (shift) secondary general educational school
Secondary technical and other special secondary schools (daytime, evening and correspondence)
Secondary general educational poly-technical school with production training
Group and individual apprenticeship
Vocational-technical schools
Boarding-schools comprising grades 1-8 and 1-11
Eight-year general educational school
Pre-school institutions

The correctness of the measures envisaged by the 1958 Law was confirmed by the Twenty-Second Congress of the Communist Party of the Soviet Union (October 1961) which devoted considerable attention to the question of educating the rising generation.

SUPERVISION OF PUBLIC EDUCATION

Laws and instructions on general trends of development in Soviet education, on the educational system and types of educational establishments and also other laws operative throughout the country are promulgated by the U.S.S.R. Supreme Soviet and the U.S.S.R. Council of Ministers, while those valid within the Union republics are issued by the Supreme Soviets and Councils of Ministers of the republics. The general supervision of the activities of the educational institutions is exercised by the ministries of education of the Union republics, the ministries of higher and secondary special education, the ministries of culture of the U.S.S.R. and the Union republics, and the State Committee on Vocational-Technical Education.

The kindergartens and playgrounds, general educational schools and all other educational institutions for children, the schools for adults and the higher and secondary pedagogical schools are under the jurisdiction of the ministries of education of the Union republics.

In the autonomous republics and national districts, territories, regions, cities and districts direct supervision of public education is exercised by local public educational bodies—ministries of education of autonomous republics, territorial, regional, city and district boards of public educaton.

The ministries of education of the Union republics and their local bodies elaborate plans for the development of public education, establish the network and contingents of kindergartens, schools and other institutions, draw up the budget for public education, select and distribute the pedagogical personnel, exercise supervisory control, study and analyse the state and results of the work, and popularise progressive methods of training and education. Moreover, the ministries of education of the Union republics work out school curricula, issue instructions which guide the training, educational and organisational work of the institutions of public education, and approve textbooks and school supplies.

The ministries of education of the Union republics have administrations and departments. For example, the R.S.F.S.R. Ministry of Education has the following administrations: administrations of eight-year schools, secondary schools, boarding-schools and children's homes, evening and correspondence general education, pre-school education, curricula and methods, higher and secondary pedagogical schools, teachers and supervisory personnel, plans and finances, and capital construction. Moreover, the system of the Ministry has a Chief Administration of Enterprises of the Industry of School Appliances, Chief Administration of Supplies, Textbook Publishing House and State Publishing House of Children's Literature, Educational Methods Council, Artistic and Technical Council for Toys, Central Advanced Teacher Training Institute, central offices on methods of pre-school education and children's homes, central stations of young naturalists, young technicians, and certain other institutions.

The R.S.F.S.R. Ministry of Education publishes the following journals: *Public Education, Boarding-School, Pre-School Education, Elementary School, School and Production, General Educational School for Adults,* ten

journals on methods in the different subjects taught in school and the journal *Soviet Schoolchild.*

The Ministry of Education and the local boards of education exercise state control of the quality of training and education in the educational institutions under their jurisdiction and render methodological aid to school workers through supervisors appointed from among the best teachers.

The training, educational and administrative work in the school is supervised by the principal. His first assistant and deputy in an eight-year school is in charge of the curriculum. In secondary schools with production training the principal has two assistants—one in charge of the curriculum and the other—of production training.

The principals and their assistants in charge of the curricula are appointed from among the teachers with a higher pedagogical education and not less than three years' experience, the assistants in charge of production training—from among engineers or technicians trained in a field closely related to the specialisation of the school and having pedagogical experience.*

In its work the school administration is assisted by the public represented in schools by parents' committees.

For efficient organisation of education grade supervisors are appointed from among the teachers. The work in methods is conducted and the best pedagogical experience is studied and generalised by commissions on school subject methods under supervision of the most experienced and competent teachers. A Pedagogical Council composed of teachers, the senior Young Pioneer leader, the school physician and the chairman of the parents' committee is organised to consider questions of training and education. The work of

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* It has lately become customary to elect principals by ballot of the teaching personnel.

the council is supervised by the principal. Directly responsible to the principal are also the senior Young Pioneer leader, the school librarian and the school physician.

The supervision of the work of other training and educational establishments for children has many features in common with that of the school.

The vocational training of the youth is supervised by the State Committee on Vocational-Technical Education and by analogous committees in the Union republics.

The Committee elaborates curricula, draws up the educational documentation, helps the Union republics in preparing and publishing textbooks and study-aids for all types of vocational-technical education, and works out standard types of equipment, tools and instruments for school shops, laboratories and study-rooms. The committee also studies, scientifically generalises and popularises the national and foreign experience of vocational-technical training, and considers certain other related questions of nation-wide importance. The committee publishes a monthly journal *Vocational-Technical Education.*

The vocational-technical school is headed by a principal. The production training is supervised by his assistant who is in charge of production training, the general-educational work is supervised by the assistant principal who heads the cultural and educational work. Each such school has an advisory body—production training council—which functions under the school principal.

The organisation, educational methods and scientific work in higher and secondary special schools are supervised by the ministries of higher and secondary special education of the U.S.S.R. and the Union republics.*

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* In the Union republics with a small population these functions are performed by ministries of education.

Monthly journals—*Herald of the Higher School, Special Secondary Education*, etc.—are published in the U.S.S.R.

All the activities of secondary technical and other special secondary schools are supervised by principals and their assistants in charge of the educational work, the evening and correspondence departments.

The schools of higher learning are headed by presidents, the instruction and scientific work—by their assistants, vice-presidents. The faculties are supervised by deans appointed from among the professors or associate professors of the leading subjects of the given faculties.

Each school of higher learning has a Scientific Council, the president of the school acting as chairman of the council. The council includes the vice-presidents in charge of instruction, the deans of the faculties, the heads of the departments, certain professors and representatives of the public organisations of the given school. The council may include representatives of industrial enterprises and institutions.

Large higher schools have faculty councils which co-ordinate the work of the professors and instructors of their particular faculties.

The basic instructional unit of each school of higher learning is the department which is in charge of instructions, methods and scientific research in the given field. The heads of departments, professors, associate professors and instructors are appointed on a competitive basis, the competition being announced by the administration through the press.

Once every five years the professors, associate professors and instructors are elected for a new term by secret ballot of the Scientific Council of the given institution. Should they fail to be elected their posts are announced vacant and new persons are appointed on a competitive basis.

The work of libraries, museums, clubs, lecture bureaus and other cultural and educational institutions for adults is supervised by the ministries of culture of the U.S.S.R. and the Union republics.

FINANCING PUBLIC EDUCATION

Society's interest in the development of education and culture is clearly evidenced in the generous state appropriations for the general cultural needs of the people, public education in particular.

The steadily increasing expenditures on education characterise the entire history of the Soviet state. This is eloquently attested by the following figures (in thousand million rubles):

1940	1950	1955	1960	1964 (planned)
2.2	5.7	6.9	10.3	14.6

About 80 per cent of the budget appropriations for education is earmarked for the maintenance of schools and other children's educational establishments and training of personnel.

The 1964 budget envisages appropriations of 14,600,000,000 rubles for education, science and culture (4,300,000,000 rubles more than in 1960). In 1964 all the expenditures on general cultural needs will amount to more than 37 per cent of the total budget expenditures, as against the 27.3 per cent in 1960. These expenditures include 4,300,000,000 rubles for the maintenance of schools. The appropriation for kindergartens and nursery schools will amount to 1,400,000,000 rubles.

The 1964/65 budget allocations for higher educational establishments, special secondary and vocational-technical schools total 5,500,000,000 rubles.

The state expenditures on the development of science will reach 10,600,000,000 rubles in 1964-65 (3,300,000,000 rubles more than in the two preceding years). These allocations ensured further extension of the network of scientific research institutions and the carrying out of the planned research.

The following table of state expenditures on the maintenance of various types of educational establishments (in million rubles) shows what sums the Soviet Government spends on universal compulsory education of children and on development of secondary and higher education.

Types of educational establishments	1933	1940	1950	1962
Schools	173.1	886.3	2,017.1	3,913.0
Secondary technical and other special secondary schools	55.0	184.1	422.0	585.0
Higher schools	106.0	287.8	721.0	1,286.0

PROVISION OF TEXTBOOKS AND SCHOOL SUPPLIES

Production of textbooks and school supplies and timely provision of the school population with them are an important part of the organisation of education. This work is supervised by the state in a centralised manner.

Increasingly more textbooks and school manuals are

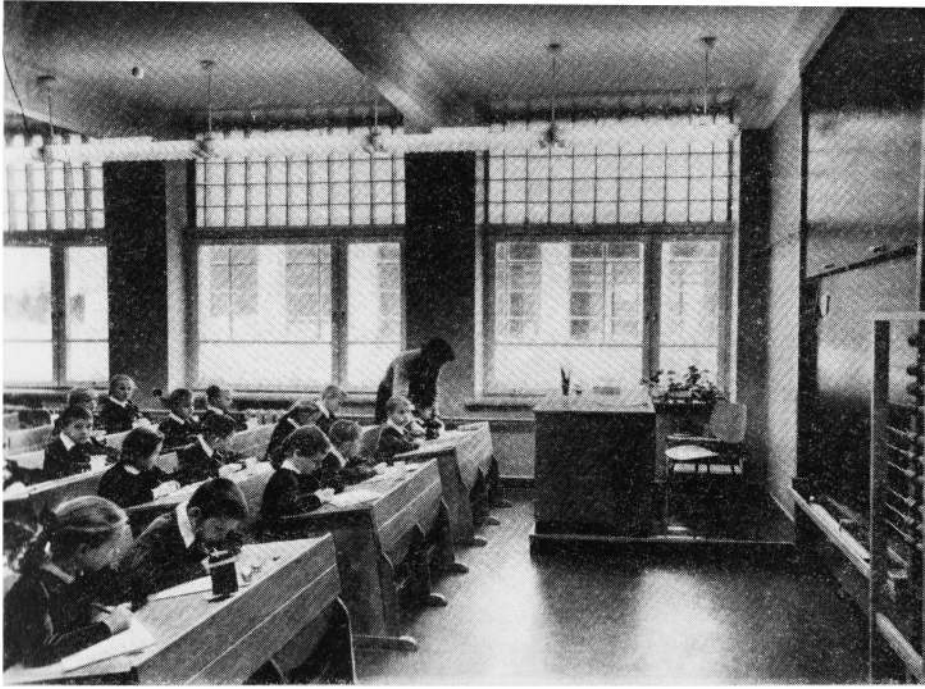
published in the U.S.S.R. with each passing year. A total of 10,589 textbooks and manuals with a circulation of 353.7 million copies was published in 1962 (115 per cent more than in 1940, 41 per cent more than in 1955 and 13 per cent more than in 1961).

A large increase has been observed in the production of textbooks for the general educational school. Some 293.9 million copies of textbooks were published in 1962 (134 per cent more than in 1940, 39 per cent more than in 1955 and 27 per cent more than in 1960). The textbooks were published in 55 languages of the peoples of the U.S.S.R. and in 10 foreign languages.

The textbooks and literature on methods are published mainly by publishing houses in the Union and Autonomous republics. Ten of the Union republics have special publishing houses of educational and pedagogical literature; the largest of them is *Uchpedgiz* (Textbook Publishing House) of the R.S.F.S.R. Ministry of Education.

The rate of increase in publication of textbooks (including the literature for training by correspondence) in recent years may be traced in the following table:

Types of educational establishments	1955		1960		1962	
	Number of books	Circulation in mill.	Number of books	Circulation in mill.	Number of books	Circulation in mill.
General educational schools	2,210	211.7	2,485	229.1	2,611	293.9
Secondary technical schools	934	8.2	1,091	10.6	1,524	14.2
Higher schools	2,091	22.2	4,992	27.9	5,503	34.6
Vocational-technical schools	59	1.1	66	2.2	98	3.7
Various courses	499	7.1	774	7.9	853	7.4



Lesson in the first grade

The Soviet Union publishes literature in methods and principles of education. Some 11,000 books with a total circulation of close to 68 million volumes of this branch of literature were published in 1962 alone. In addition, 210 pedagogical, subject-methods and other journals on questions of culture and education with a total annual circulation of more than 37.7 million copies and 32 newspapers, including 14 teachers' newspapers, are published in the U.S.S.R.

The fact that the schools and all other educational establishments in the U.S.S.R. are wholly under the jurisdiction of the state accounts for the high demands made of the quality of the textbooks published for all branches of the system of public education. The Academy of Pedagogical Sciences has elaborated

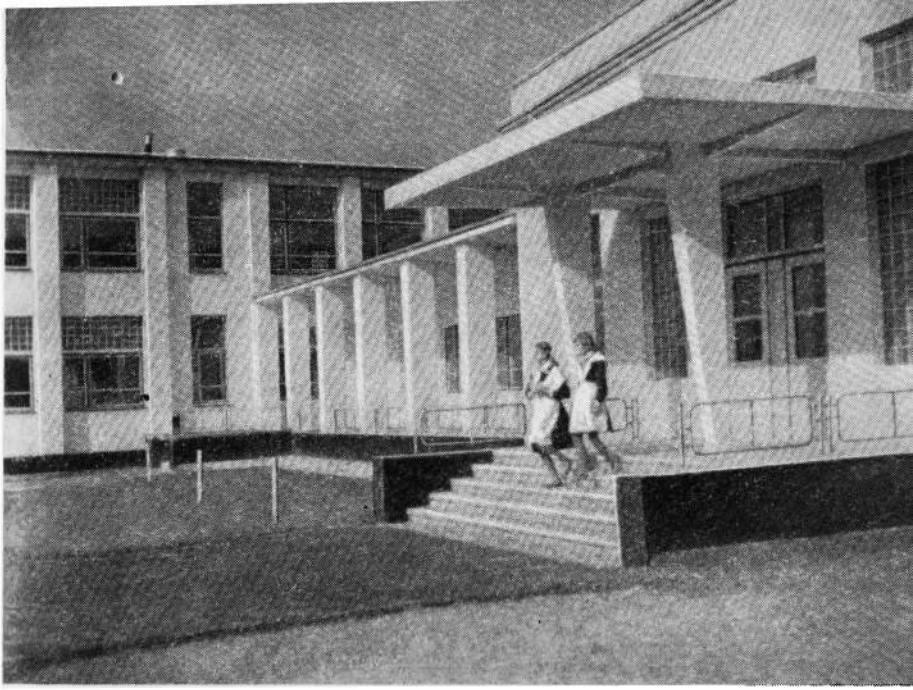
scientific-pedagogical requirements for textbooks and school supplies in all subjects of the curriculum of the secondary general educational school.

The textbooks are written by prominent scientists and experienced teachers. Not infrequently they are written on a competitive basis. Some textbooks are published in test editions for a practical check-up. Dozens of experimental textbooks, for the first time including such subjects as singing and drawing, have been prepared and published in recent years.

An industry for the manufacture of school supplies has been set up in the U.S.S.R. Various orders of the ministries of education for equipping study-rooms for physics, chemistry, biology, etc., are filled by many industrial enterprises. Moreover, these enterprises may transfer to general educational schools free of charge any equipment no longer used in production but still fit for educational purposes; this equipment includes various machines, engines of internal combustion, electric motors, automobiles, tractors, agricultural machinery, machine tools, machine parts, laboratory and other supplies.

CONSTRUCTION OF EDUCATIONAL ESTABLISHMENTS

Construction of new school buildings is in full swing. A total of 6,103 schools with accommodation for 1,798,000 pupils (including 4,637 schools for 922,600 pupils in rural areas) were built in 1962. Construction of complexes of buildings for boarding-schools, including dormitories and school buildings, service buildings, sports, facilities, school experimental plots, etc., was

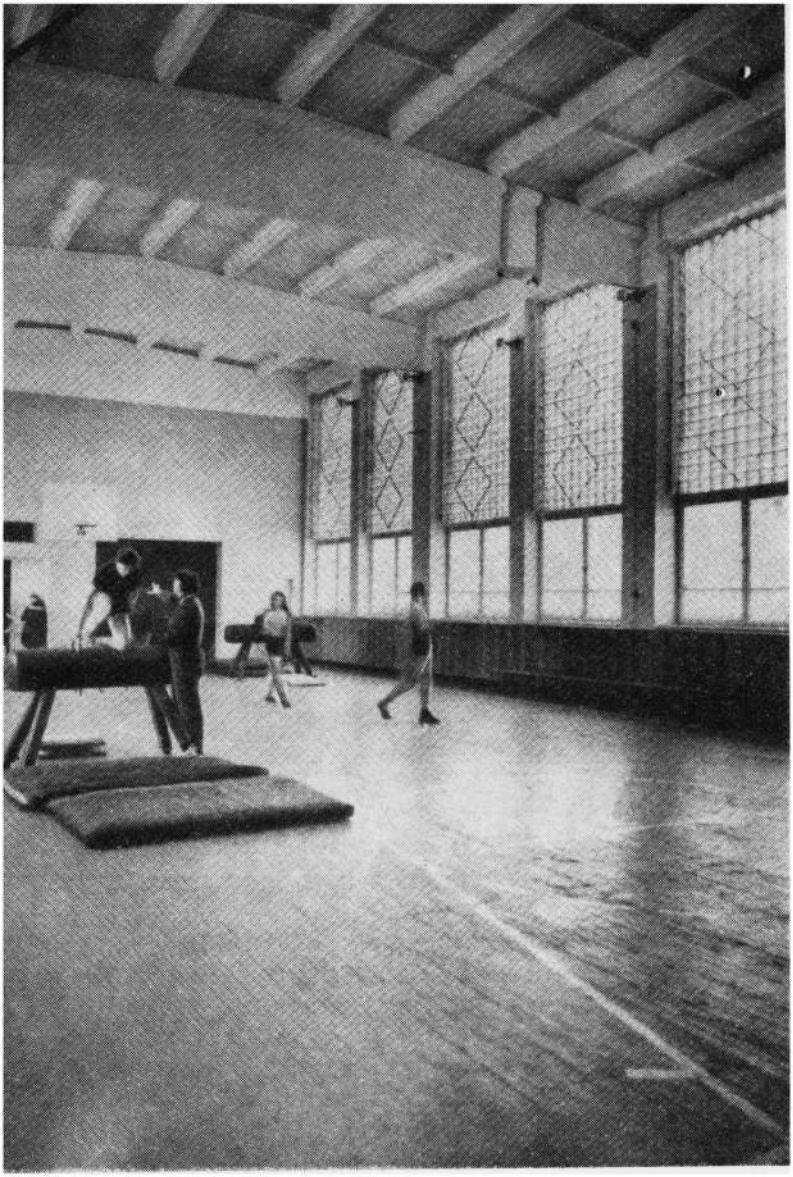


Secondary school in the town of Dubna, Moscow Region

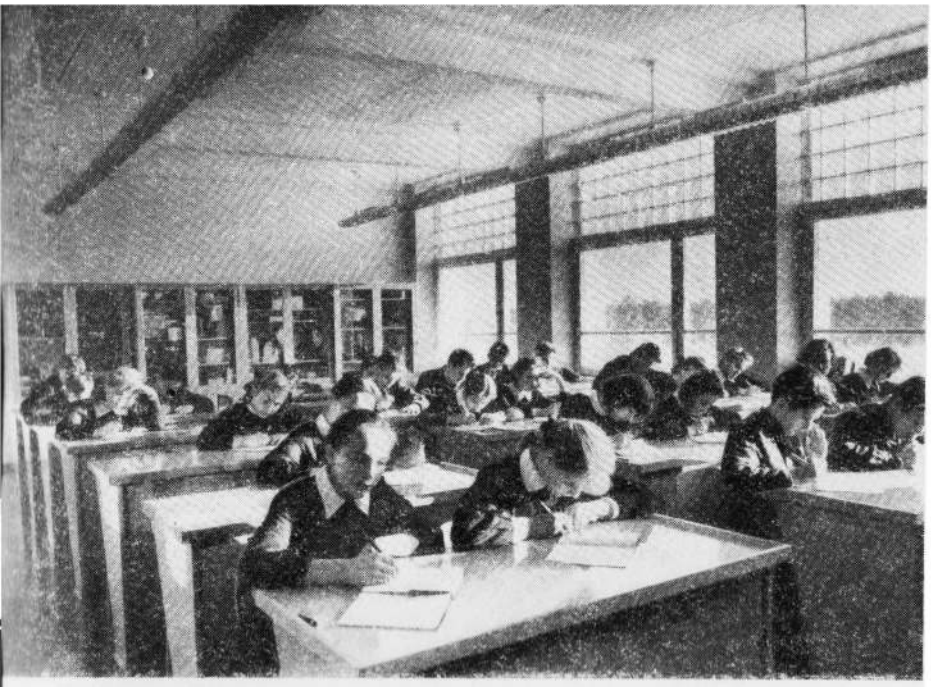
launched in 1958 with the result that 1,448 boarding-school campuses on which more than 631,000 pupils are being trained and educated have been built during the past four years.

New school buildings are being erected all over the country by ministries of education of the Union republics, local Soviets, various departments and collective farms.

The school buildings are put up according to standard designs elaborated by the State Institute for Designing Schools, Kindergartens and Other Public Education Institutions. Rural elementary schools are usually designed for 20, 40, 60 and 120 pupils, rural eight-year schools—for 320 pupils. The eight-year and secondary



Gymnasium



In the physics laboratory at school

schools in towns are designed to accommodate 960 and less frequently—480 and 640 pupils. The complexes of buildings for boarding-schools are designed to accommodate 330, 420 and more pupils.

Schools are built in strict conformity with the sanitary and hygienic requirements elaborated by the U.S.S.R. Ministry of Public Health. These requirements also restrict the number of pupils per class, namely, 40 pupils per class in grades 1-8 and 35 pupils per class in grades 9-11.

Considerable attention is being devoted to construction of pre-school institutions. Pre-school institutions with accommodation for 2,995,000 children were put into operation during 1951-62; these included the facil-

ities for 1,044,000 children built at the expense of collective farms.

Kindergartens are built in accordance with all standards of kindergarten designing, which require 25-30 cubic metres of space per child. These standards also provide for construction of verandahs and porches, allotment of plots for playgrounds and gymnastic facilities, kitchen gardens with berry patches and fruit trees, nooks for animals and birds, summer shower baths and reservoirs.

Extensive construction of buildings for special higher and secondary schools is under way; these buildings are being designed by a special designing institute.

Special, well-equipped complexes of buildings were recently put up for the Moscow, Tajik, Kirghiz, Turkmen and other universities, the Moscow Road Construction Institute, Samarkand Medical Institute, Minsk Pedagogical Institute and many other higher educational establishments and secondary technical schools. More than 500 million rubles were spent on construction of higher schools during 1955-62 alone.

HEALTH EDUCATION

The Soviet state, public education bodies and other public organisations display special concern for the protection of the health of children and youth.

The permanent staffs of the kindergartens, schools and other educational establishments include physicians and nurses who see to it that the rules of school hygiene and sanitation are observed, watch over the health and physical development of the rising generation, supervise the lessons of physical education and the work of physical culture and sports circles, and together with teachers and other school personnel carry on work in health education.

In the work of health education and hygiene conducted in the schools the teachers receive considerable help from the U.S.S.R. Red Cross and Red Crescent Society which has a branch in every school.

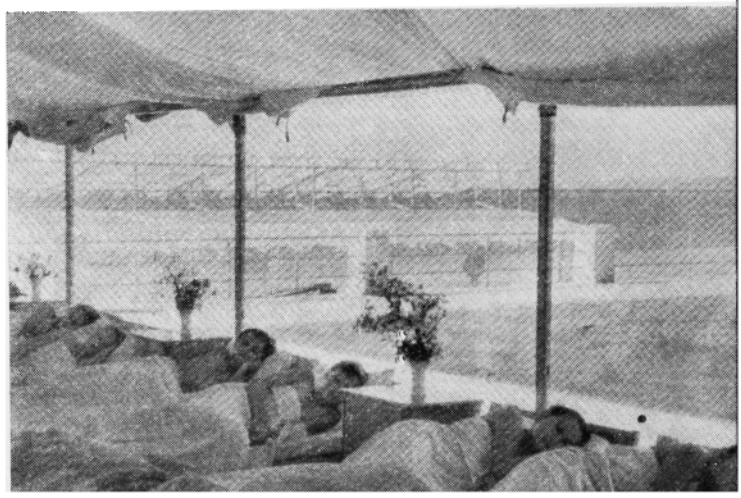
Rational recreation for the youth is organised throughout the year by various amateur sports societies under the jurisdiction of trade unions, clubs and parents' committees in house managements. Stadiums, facilities for aquatic sports, skiing depots and skating-rinks have been built for the children and youth.

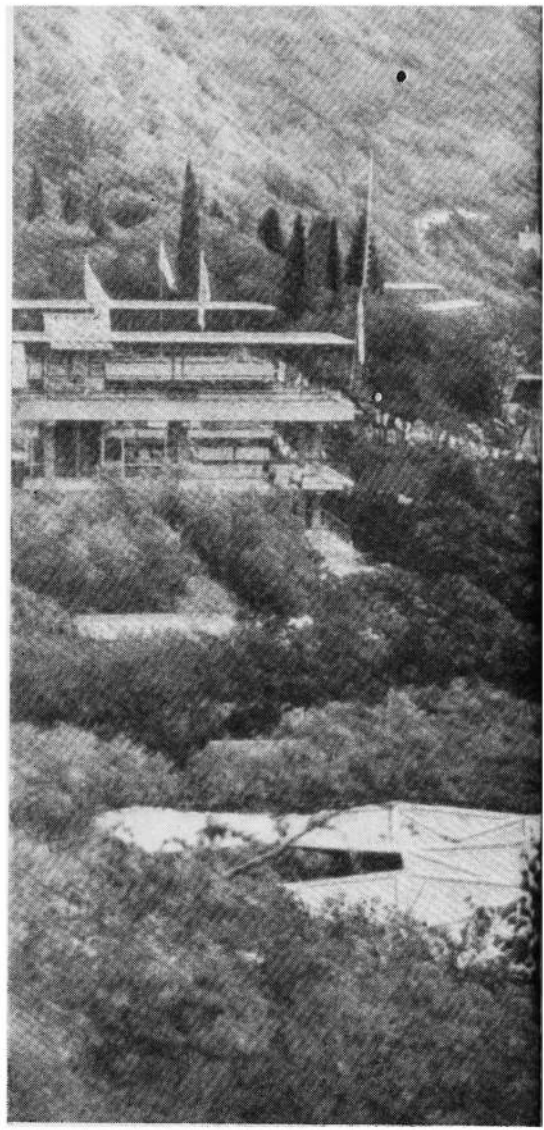
A great deal in the way of building up the health of children and adolescents is done during school vacations. About ten million children and adolescents annually spend their summer vacations in summer camps, children's sanatoriums and at excursion and tourist bases. Health camps and playgrounds are set up at schools, in house managements and parks for children who stay in town for the summer.

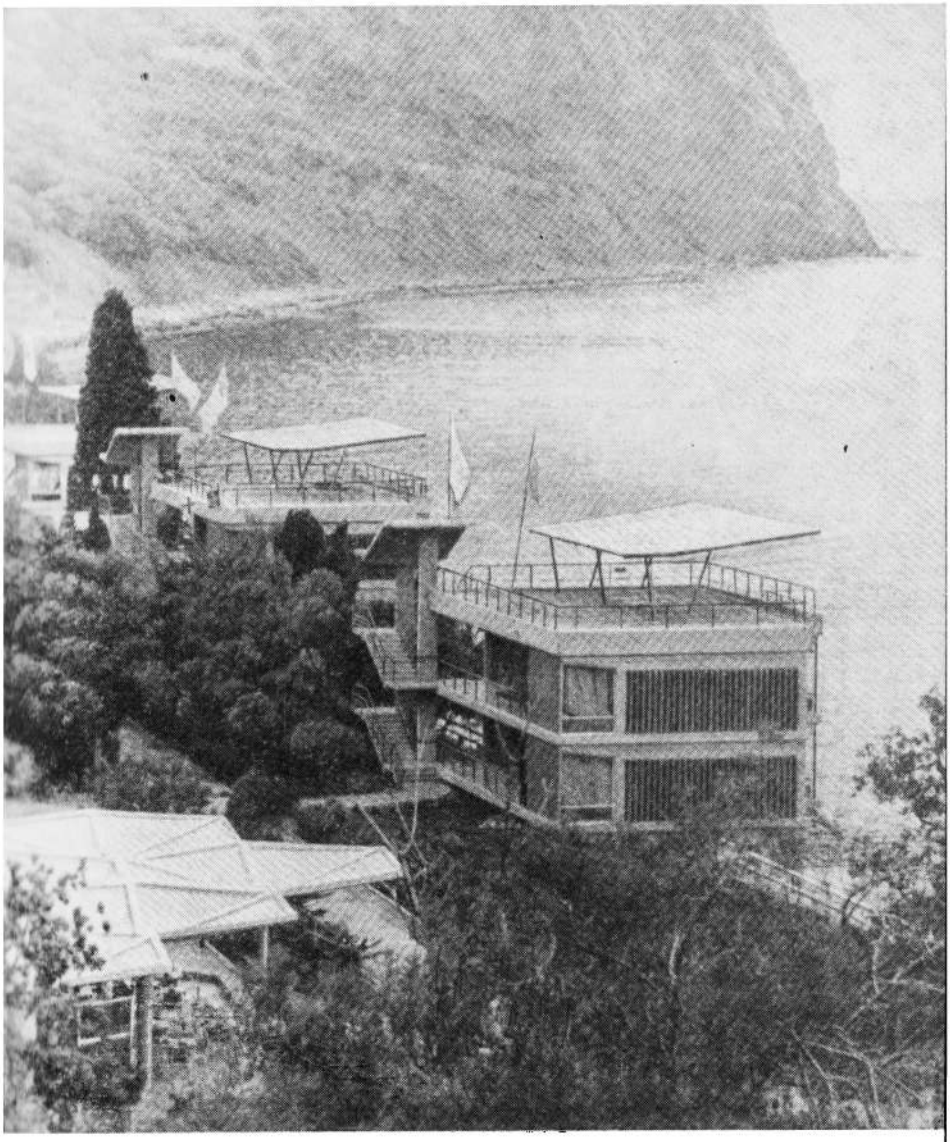
There were 127 sanatorium-type (situated in forests) schools for debilitated children in the R.S.F.S.R. during the 1963-64 school year alone; these schools accommodated 12,000 pupils.

For debilitated children in need of special care there are state sanatoriums in which these children are, as a

An after-dinner nap in the Orlyonok Young Pioneer Camp near Tuapse, Caucasus







Artek Pioneer Camp situated at the foot of the Bear Mountain on the Black Sea Coast, Crimea

rule, accommodated free of charge. More than 150,000 children were treated in such sanatoriums in 1963.

Considerable attention is devoted to the health protection of adolescents who have started working in industry or the other branches of the national economy. In the U.S.S.R. employment of adolescents under 16 years of age is prohibited. The workday for adolescents between 16 and 18 years of age is only 6 hours, while the wages are the same as those of adult full-time workers of the same categories. All factory and office workers under 18 years of age are given one month's paid leave.

Students' clubs, stadiums, and various cultural, educational and athletic facilities are widely utilised during the academic year for purposes of recreation and health-building of the students of special higher and secondary schools; during vacations the students take part in hikes and excursions, and are accommodated in tourist and mountaineering camps, students' sanatoriums and holiday homes.

TEACHER TRAINING

The development of public education and culture in the U.S.S.R. has been accompanied by a rapid increase in the ranks of educational workers.

The number of teachers engaged in general educational schools of various types during the 1962-63 school year was 2,234,000, or nearly 9 times the number of teachers employed in 1914.

The increase in teaching personnel is particularly noticeable in the various Union republics. For example, in pre-revolutionary Georgia there were 5,900 teachers during the 1914-15 school year, whereas during the 1962-63 school year the number of teachers increased to 59,400, i.e., tenfold. Only 13 teachers were engaged in

Young Pioneers on duty keep an eye on the order in the dormitories, Zvenigorod, Moscow Region

the schools of Tajikistan in 1913; today Tajikistan has more than 20,000 teachers.

In the U.S.S.R. teachers are trained in special pedagogical institutions most of which have come into existence in Soviet time. These institutions include 204 pedagogical institutes, 41 universities and some 350 secondary pedagogical schools. The secondary pedagogical schools train teachers for grades 1-4. These schools are gradually being closed down and in their place, in conformity with the 1958 Law, the pedagogical institutes are establishing faculties with four-year courses for training teachers for the primary grades. Teachers with only a secondary pedagogical education will now be able to get a higher education by attending evening school or taking correspondence courses.

The pedagogical institutes and universities offer a higher pedagogical education for teachers for grades 5-11. The course of training is 4-5 years, the curriculum varying with the faculty. The following are some of the faculties: physics and mathematics, physics and chemistry, geography and biology, history and geography, history and philology, foreign languages, musical education, physical education. Beginning with 1956 some pedagogical institutes offer courses of training with a kindred major and minor, for example, physics and mathematics, chemistry and biology, Russian and a foreign language, etc.

Increasingly more teachers are being trained for polytechnical and industrial education of pupils of the upper grades of general educational and special secondary schools. More than 100 special industrial pedagogical and agricultural pedagogical faculties have been organised in the existing pedagogical institutes of the R.S.F.S.R. in 1960 alone.

There are universities and pedagogical institutes in all the Union republics; in these institutions the teach-

ers are trained in the native languages of the given republics. Of the 20 universities in the R.S.F.S.R. 7 are in the Autonomous republics of Bashkiria, Daghestan, Kabardino-Balkaria, Mordovia, Tataria, Karelia and Yakutia.

Pedagogical education given in evening institutes and by correspondence, the students continuing with their regular work, is developing successfully. During the 1962-63 academic year there were three educational establishments engaged only in this type of work and 285 evening and correspondence departments in the pedagogical institutes with an enrolment of 358,700 students.

The pedagogical institutes offer the necessary theoretical and practical training. The theoretical training consists of the following cycles:

(1) Social and economic subjects—history of the Communist Party of the Soviet Union, political economy, dialectical and historical materialism (11-12 per cent of the academic time).

(2) Pedagogical subjects—pedagogics, history of pedagogics, psychology, school hygiene, various methods (11-12 per cent of the academic time).

(3) Special subjects in the fields of the students' major and minor (about 70 per cent of the academic time).

In accordance with the requirements of the 1958 Law many faculties now offer courses teaching application of scientific knowledge in the national economy. For example, the faculties training teachers of mathematics, physics, chemistry, biology and geography offer courses in fundamentals of machinery with elements of technology of materials, fundamentals of agricultural production, and practice in school shops.

A course in educational films is one of the core courses of all the faculties of pedagogical institutes; some

institutes offer practical courses in supervision of school scientific and technical circles, as well as of amateur art circles. During the course of training in the institute each student must take at least three such courses.

Students of pedagogical institutes do their practice teaching in urban and rural schools and in Young Pioneer camps. The faculties training teachers of physics, chemistry and biology require their students to take practice in industrial and agricultural production.

The evening and correspondence pedagogical institutes have the same curricula as do the regular pedagogical institutes. Correspondence students are exempt only from practice teaching since they already teach school. Educational consultation centres are organised in all large secondary schools and wherever there are at least 50 correspondence students.

Advanced teacher training institutes have been organised in every republic, administrative region and territory, and pedagogical centres—in each district and city. In the R.S.F.S.R. alone there are close to 3,000 pedagogical centres and 87 advanced teacher training institutes, including the Central Institute for Advanced Training of Leading Educational Personnel.

The pedagogical institutes follow up their former students (now teachers of general educational schools) and help them in methods and practical work.

The central figure in the educational and training process is the teacher whose work is highly appreciated by the people. More than 122,000 teachers have been elected deputies to the Supreme Soviet of the U.S.S.R., the Supreme Soviets of the Union and Autonomous republics, and to local Soviets.

For their long and meritorious services more than 300,000 teachers have been decorated with Orders and medals, some 30,000 of them being awarded the highest Soviet decoration—the Order of Lenin. Especially

distinguished teachers, supervisors and other educational workers are given the high title of Honoured Teacher and the highest honorary title of Hero of Socialist Labour. For outstanding contributions in the field of pedagogical science teachers and other educational workers are decorated with the Ushinsky* Medal.

In Soviet time the teachers' salaries have been raised several times. In the U.S.S.R. the teachers are paid a progressive scale in accordance with which their salaries increase after 5, 10 and 25 years of teaching. Teachers with more than 25 years' service get a 30 per cent salary increase and, additionally, a pension amounting to 40 per cent of their basic salaries. Rural teachers are given free housing with heating, lighting and other services. The Soviet Government gives long-term credits to rural teachers for building cottages of their own, if they so desire.

Trade union organisations display great concern about teachers. They, not only protect the teachers' rights, but also help to spread and introduce advanced pedagogical experience and enlist the active participation of teachers in improving the work of education and training in the school. Teachers' clubs of which there are more than 200 in the R.S.F.S.R. alone devote considerable attention to cultural services of teachers and other educational workers and their families. The clubs have fine arts studios, music, athletic and tourist societies, dramatic and other circles. Educational workers come to their clubs for recreation, lectures, concerts and motion picture shows.

Secondary pre-school teacher training schools turn out kindergarten and playground teachers. There are more than 80 such schools with an enrolment of some

* Ushinsky, K. D. (1824-1870), outstanding Russian educator, one of the founders of Russian pedagogical science and of the Russian public school, author of the well-known treatise *Man as the Object of Education*, a number of textbooks and many other works.

37,000 students in the R.S.F.S.R. alone. These schools admit secondary school graduates and offer a two-year course of training. Pre-school departments of pedagogical institutes train highly skilled pre-school workers. The Moscow (V. I. Lenin) and Leningrad (A. I. Herzen) pedagogical institutes offer post-graduate courses in pre-school pedagogics to train scientific workers in this field.

The ministries of education of the Union republics operate centres in pre-school methods, which help the workers of pre-school institutions and generalise the experience of their work. Various literature on questions of pre-school education is extensively published. The monthly *Pre-school Education* is being published since 1928.

Teachers for vocational-technical and special secondary schools are trained in pedagogical institutes and universities, whereas those of special subjects are trained at special pedagogical courses and are selected from among engineers and technicians.

Teachers for the higher school are trained in post-graduate departments of higher educational establishments and research institutes, as well as by correspondence.

Workers for extra-school institutions and cultural and educational establishments for adults are trained by a large network of special schools, secondary and higher library schools and other secondary and higher educational establishments.

PEDAGOGICAL SCIENCE

Pedagogical science plays an important role in the development of education and culture in the U.S.S.R. It treats of the general laws of communist education of the rising generation, elaborates problems of the theory

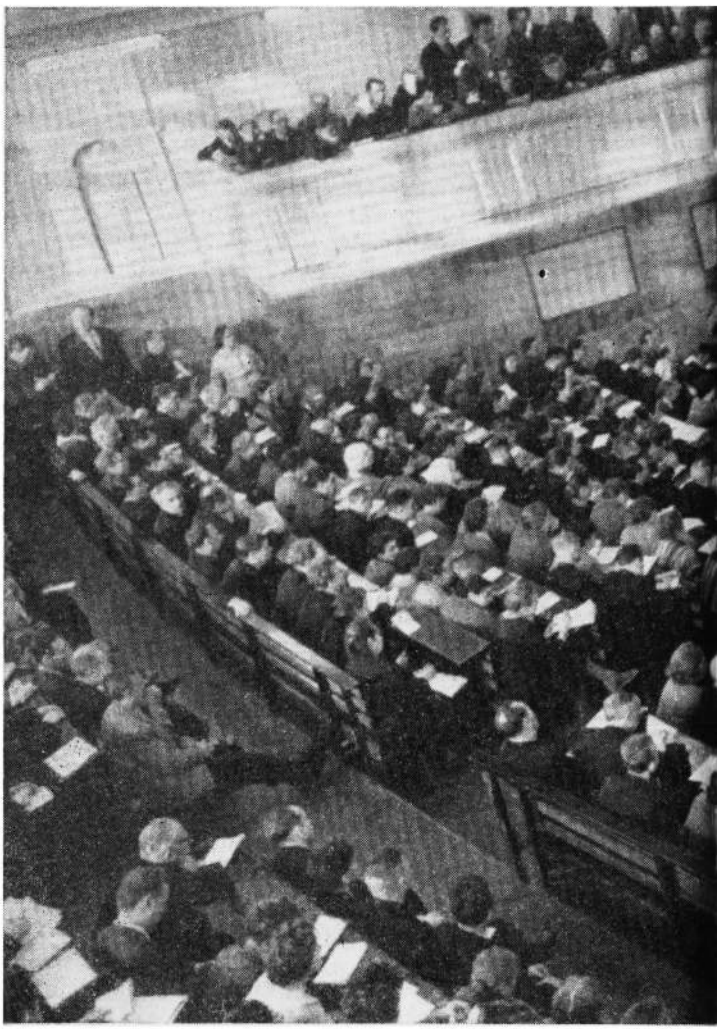
of training and of moral, physical and aesthetic education, and directly serves the state by pedagogically substantiating the prospects for the development of public education in the country.

Soviet pedagogical science is making extensive use of the ideological and theoretical wealth left by the representatives of progressive pre-revolutionary pedagogics A. I. Herzen, V. G. Belinsky, N. G. Chernyshevsky, N. A. Dobrolyubov, N. I. Pirogov, L. N. Tolstoi, K. D. Ushinsky, P. F. Lesgaft, Y. Gogebashvili and other outstanding educators. Their pedagogical views are characterised by national aspects, profound humanism and consideration for the child's personality. In addition, Soviet pedagogy also utilises the fruitful ideas of progressive foreign educators—J. A. Komensky, J. Pestalozzi, J. J. Rousseau, F. A. W. Diesterweg, etc.

Soviet pedagogics is based on the materialist doctrine of the formation of the human personality developed by the classics of Marxism-Leninism. K. Marx, F. Engels and V. I. Lenin uncovered the main law of education—its dependence upon social relations, scientifically substantiated the social significance of man's all-round development based on training combined with productive work, and elaborated the scientific principles of general and polytechnical education.

Valuable contributions to Soviet pedagogics were made by M. I. Kalinin, N. K. Krupskaya, A. S. Makarenko and other Soviet statesmen, public figures and educators who developed the Leninist teaching on the cultural revolution and communist education of the rising generations.

The R.S.F.S.R. Academy of Pedagogical Sciences, pedagogical research institutes of the Union republics and the pedagogical departments of the higher pedagogical schools and universities have been assigned the problem of elaborating the theory and history of



Central Pedagogical Readings at the Lenin State Pedagogical Institute in Moscow

pedagogics and the theory and practice of the Soviet school.

The scientific workers engaged in research in pedagogical science in 1962 numbered 18,200; some 10,000 of them conducted research in departments of pedagogical institutes and universities.

The organisation of research in pedagogical science in the U.S.S.R. is characterised by participation of a large number of leading teachers. Their creative activities are attested by their reports to annual district, regional, territorial and republican Pedagogical Readings. The Pedagogical Readings organised by the Academy of Pedagogical Sciences in Moscow are the final stage of these Pedagogical Readings in the R.S.F.S.R. Since 1945, when the Pedagogical Readings were begun, the Academy of Pedagogical Sciences has received more than 18,000 reports from teachers and other educational workers.

Teachers' conferences regularly held in regions, territories and republics are a particularly important and effective form of exchange of experience and collective quest for new ways of improving the work of education and training. First in importance among these conferences were the republican congresses of teachers held in all the Union republics in 1960. These congresses were the first to check up on the implementation of the Law on Establishing Closer Links Between School and Life and on the Further Development of Public Education, and to outline ways and means of improving the work of the school and extra-school institutions.

The participation of so many institutions and individual persons in research necessitates extensive planning and co-ordination of this work. In the R.S.F.S.R. the problem of drawing up current and long-term research plans and of co-ordinating pedagogical research is as-

signed to the R.S.F.S.R. Ministry of Education and the Academy of Pedagogical Sciences.

The R.S.F.S.R. Academy of Pedagogical Sciences—the highest scientific institution uniting the scientists in the field of pedagogics—was founded in 1943. Its objectives include scientific elaboration of problems of general and special pedagogics, history of pedagogics, aesthetic and physical education, psychology, school hygiene and methods of teaching various subjects in the general educational school, training of scientific workers in pedagogical sciences, furthering public education and disseminating pedagogical knowledge among the people.

In 1964 the Academy has 32 members and 69 corresponding members; fifteen of them are teachers. The various institutions of the Academy employ more than 650 scientific workers who conduct research in all branches of pedagogics.

The membership of the Academy is periodically increased. The candidates for membership and corresponding membership of the Academy are nominated by scientific institutions, higher educational establishments, public organisations and individual scientists; the lists of candidates are published in the press. The elections are held by secret ballot at general meetings of the members of the Academy.

All the activities of the Academy are supervised by a Presidium consisting of a President, two vice-presidents and six members of the Presidium. The Presidium is also elected at a general meeting by secret ballot for a period of four years.

The following research institutes are the main scientific institutions of the Academy of Pedagogical Sciences: Institute of Theory and History of Pedagogics, Institute of Pre-school Education, Institute of General and Polytechnical Education, Institute of Industrial

Training, Institute of Evening (Shift) and Correspondence Secondary General Educational Schools, Institute of Non-Russian Schools, Institute of Child-Physiology, Institute of Physical Education, Institute of Psychology, Institute of Aesthetic Education, and Institute of Defectology. Three laboratory-schools—institutions of a new type—enjoy the rights of research institutions; one of these is conducting research in pedagogical problems of boarding-schools.

The Academy also has institutions which serve as bases for experimental research; these are various general educational schools, boarding-schools, kindergartens, etc. In addition, the Academy has auxiliary scientific institutions, namely, the K. D. Ushinsky State Library of Public Education with a stock of close to a million Soviet and foreign books and journals, the Scientific Pedagogical Archive and the House of Propaganda of Pedagogical Knowledge. The latter helps to disseminate pedagogical knowledge among the people and to introduce advanced pedagogical experience into the practice of schools and other educational institutions.

In the Soviet Union the children, their age and individual characteristics are studied by several sciences—pedagogics proper, general and child psychology, age anatomy and physiology, and school hygiene.

Soviet pedagogical science devotes particular attention to studying the problem of all-round harmonious development of the human personality.

The theoretical and practical problems elaborated in the field of pre-school education are mainly those concerning a system of educating children from infancy to enrolment in school with the greatest emphasis on establishing scientific principles of public pre-school education in order to make it more effective and to ensure, not only mastery of elementary knowledge and skills by the children, but also all-round development of their

abilities, formation of requisite moral qualities and positive traits of character.

Varied research is conducted in the field of theory of education; the research is aimed at scientifically elaborating the content of general and polytechnical education and at bringing it into line with the modern standards of science and engineering and the increased cultural requirements of the members of society.

Some of the traditional views of the content of general education and of the process of its mastery are being reconsidered. For example, the Academy is conducting an experiment demonstrating that the primary grades may be taught faster than they are today. A new, rapid method of teaching reading has been developed. The possibilities of teaching geometry and algebra already in the upper grades of the elementary school are being studied. The curricula and programmes now in effect are being analysed and improved in order to do away with overloading the pupils with school work.

Questions of correlating the general, polytechnical and vocational education with the pupils' productive work are being investigated, pedagogical principles of vocational training of pupils of the upper grades (grades 9-11) are being elaborated, and the effect of the pupils' work on their general educational, polytechnical and industrial training, on their physical development and formation of their moral make-up is being elucidated.

Research is also being conducted in methods of teaching which ensure conscious and firm mastery of knowledge and the ability to make practical use of it. The conditions favouring development of cognitive activity, self-dependence and creativeness of the pupils are being studied. Special attention is being devoted to improving the methods of presenting information to stimulate the pupils to active thinking at the lessons, and

to elaborating a system of cognitive and practical problems for the pupils' independent work.

To increase the demonstrative aspects of training, questions of more extensively and effectively utilising the modern technical achievements—films, radio, television, sound recording, etc.—during lessons are being studied.

Considerable attention is being devoted to such forms of teaching as excursions, laboratory work, practical work, team and individual work in school shops and on school experimental plots, etc.

Didactic questions of adult education in its different forms of organisation—evening, correspondence, combined intra- and extra-mural—are being elaborated.

The Academy is also investigating such problems as programme teaching. The most suitable variants of instruction which can be recommended to teachers are being determined by means of statistical analysis and certain other methods. In connection with this the Academy is developing methods of analysing the mental activity of pupils in the process of training and methods of analysing the teaching activity; teaching machines are being developed.

In studying the problems of education Soviet educators are endeavouring to gain an insight into the essence of the educational process in all its complexity and its relations to other phenomena of life. They proceed from the assumption that the schoolchildren's knowledge and their direct experience are the forces which form their communist consciousness. In accordance with this, two basic methods of pedagogical influence—teaching and organisation of various practical activities of the schoolchildren—are being mainly investigated.

The Academy of Pedagogical Sciences has worked out a model programme of educational work in the school

and manuals which determine the content and methods of children's education according to age.

Considerable attention in the investigations of the problems of education is devoted to studying the peculiarities of formation of the child's personality in the process of learning and working in the general educational schools, boarding-schools and prolonged-day schools.

One of the most important objectives of pedagogical science is the development of a system of the child's physical education from birth to maturity.

The aesthetic education of the rising generation, the development of its aesthetic views and tastes, the inclusion of the aesthetic principle in all the links of the training and educational process in the school, as well as the pre-school and extra-school institutions, is likewise a problem of great pedagogical importance.

A good deal of research in psychology is concentrated on the psychological aspects of the all-round development of the personality. General problems of psychology of the personality, problems of formation of moral qualities and development of abilities in schoolchildren, psychological principles of vocational training and education in the school, and the problem of cognitive activity and mental development in the training process are being elaborated.

In the field of pedagogical and age psychology serious attention is being devoted to studies of the mental development at the early pre-school age, the peculiarities of younger schoolchildren's learning, psychological characteristics of adolescents, etc.

The research in defectology embraces a wide range of problems pertaining to typhlo-, surdo- and oligophrenopedagogics and psychology, as well as logopedics.

Studies in anomalous childhood are being conducted for the purpose of developing a scientifically substan-

tiated typology of anomalous children and determining the clinico-physiologic and psychologic peculiarities of their development. New methods of experimental objective studies of the sense organs and higher nervous activity of anomalous children have been elaborated. Theoretical principles and practical recommendations in the field of medico-pedagogical systems of education and training, as well as vocational training of pupils of special schools are being extended and deepened.

Problems of compensation of defects in vision and hearing by technical aids are being studied on the basis of the achievements of electronics, radioengineering and theory of information. Special apparatus enabling the blind to read usual books, devices for pupils with impaired vision, school and production training equipment for them, have been developed. This makes it possible to give the blind and those with impaired vision an adequate general and special education and to find vocational employment for them. Analogous work is being done in the field of compensating for hearing defects.

Special mention must be made of the achievements of Soviet defectology in teaching blind, deaf and dumb children on the basis of a natural science system developed in the U.S.S.R. Olga Skorokhodova, a blind, deaf and dumb writer and scientific worker, is an example of the results that can be achieved by this system. At the age of $4^1/_2$ years Skorokhodova simultaneously lost her vision and hearing, and then her speech. From 11 years of age she was educated in a Kharkov school for blind, deaf and dumb children. Her speech was restored by special methods and she received a general and special education. She is the author of the well-known books—*How I Perceive the Surrounding World* and *How I Perceive and Conceive the Surrounding World.*

The transactions of the Academy are published by a specialised publishing house organised in 1946 under the jurisdiction of the Academy. In the 16 years (1946-62) the Academy has turned out a considerable amount of pedagogical literature, including more than 3,700 titles of various editions of which 2,000 are books with a total circulation of close to 40 million volumes. These books include the collective works and separate writings of prominent Russian, Soviet and foreign educators, theoretical works on basic problems of pedagogical science, manuals for teachers on questions of training and education, monographs and collections of articles generalising the advanced experience of schools and teachers, manuals for parents and pupils, etc. The Academy's research is published in the scientific collections—*Proceedings of the R.S.F.S.R. Academy of Pedagogical Sciences* and *Reports of the R.S.F.S.R. Academy of Pedagogical Sciences*. The following scientific journals are also being published: *Soviet Pedagogics*, *Problems of Psychology*, *Russian Language in the National School* and *Family and School* (a popular journal for parents).

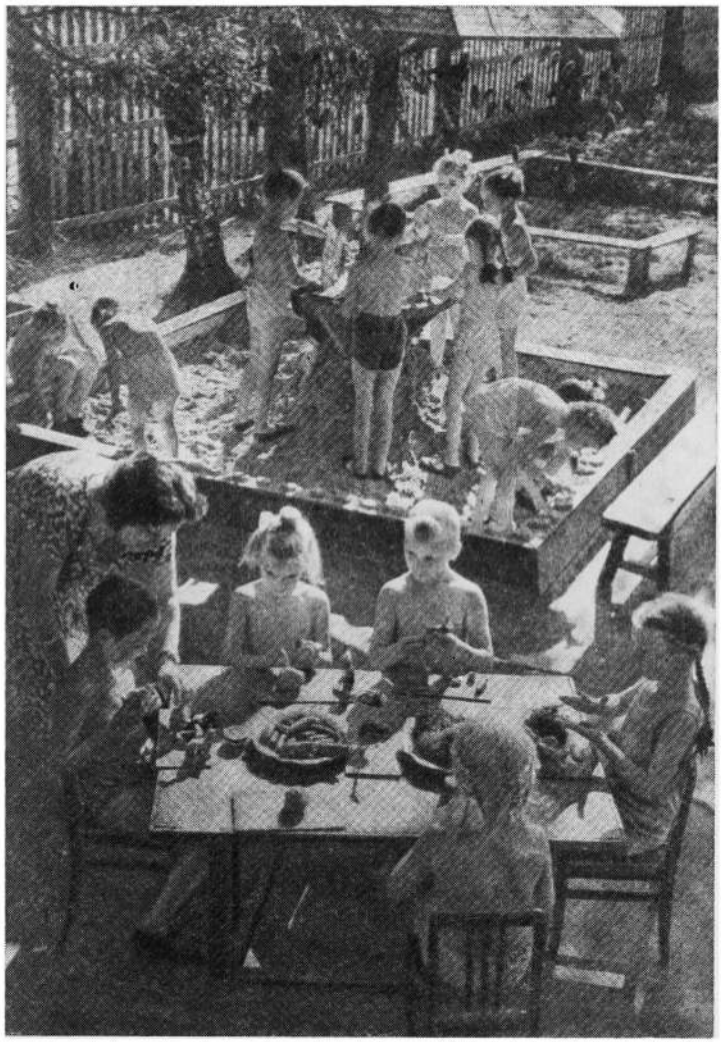
Many of the books turned out by the Academy, as well as its scientific collections and journals, are translated and published abroad.

The transactions of the republican pedagogical research institutes and of the pedagogical departments of universities are published by textbook publishing houses. Many works are published in *Transactions* put out by a number of institutes and universities.

Pre-School Education

Soviet society displays considerable concern about children even before they are born. Expectant mothers are under constant medical observation, have special holiday-homes and sanatoriums at their disposal, and are transferred to lighter work. Working women are granted 112 days of paid leave for pregnancy and childbirth and additional unpaid leave (up to 3 months) to take care of their children. They have a shorter workday and are given additional half-hour periods to nurse their babies every 3 hours. A large network of polyclinics, hospitals, maternity and infant health centres serves to protect the health of the mothers and children. All medical services are free, as they also are for everybody else.

Milk kitchens have been set up and industrial production of special foods for children has been organised to provide children with additional nourishment. Thanks to the state's concern about children and the rise in the living standards of the people, child mortality in the country has decreased to less than one-eighth its pre-revolutionary rate. The system of pre-school institutions developed in Soviet time has played an important part in this.



Modelling lesson at the Dynamo Works kindergarten, Moscow

SYSTEM OF PRE-SCHOOL EDUCATIONAL INSTITUTIONS

In the U.S.S.R. children up to 7 years of age are given a pre-school education in special educational institutions where they may be placed by their parents on a voluntary basis.

For children from 3 months to 3 years of age there are nursery schools where the children are given rational nourishment, qualified care and the initial training.

For children from 3 to 7 years of age there are kindergartens and summer and winter playgrounds. The nursery schools and kindergartens are of two types—one-day and weekly establishments. In the one-day kindergartens children spend 10-12 hours a day, in the weekly establishments they stay 6 days a week, and are taken home by their parents for Sundays and holidays. There are also sanatorium-type kindergartens with a high-caloric diet and special regimen for debilitated children. Not infrequently a nursery school and kindergarten are united in a single pre-school institution.

Nursery schools are organised by boards of health, kindergartens and playgrounds—by departments of public education. Moreover, many of these children's institutions are set up by industrial enterprises, various organisations, state and collective farms. Part of the costs of the children's maintenance in kindergartens is paid by their parents, the fees depending on their earnings.

The kindergarten of the Giant Garden State Farm, Krasnodar Territory. Children working in the kitchen garden

DEVELOPMENT OF THE NETWORK OF PRE-SCHOOL INSTITUTIONS

In pre-revolutionary Russia the state took no part in organising the education of children of pre-school age. As a rule, pre-school institutions were private undertakings, requiring payment and intended for children of the propertied classes. In 1914 there were only 275 kindergartens and playgrounds attended by about 7,000 children.

After the October Socialist Revolution education of children of pre-school age became a matter of state importance. The Programme adopted by the Eighth Congress of the Communist Party in March 1919 included the task of developing a wide network of pre-school institutions—nursery schools, kindergartens, playgrounds, etc.—for the purpose of improving public education and giving women an opportunity to participate in productive labour and public affairs.

An extensive network of pre-school institutions has been developed in the country in Soviet time. In 1962 the U.S.S.R. had 52,700 permanent kindergartens and combined nursery schools and kindergartens, as well as scores of thousands of permanent and seasonal nursery schools and summer children's playgrounds with an enrolment of 8.6 million children. Some 5.6 million children attended permanent kindergartens, nursery schools and combined nursery schools and kindergartens; the rest of the children were accommodated by the nursery schools and playgrounds set up for the summer period.

The increase in the number of children accommodated by permanent pre-school institutions can be judged from the following table:

	1913	1940	1958	1959	1960	1961	1962
Number of children in permanent kindergartens, nursery schools and combined nursery schools and kindergartens (in millions) .	0.005	2.0	3.5	3.9	4.4	5	5.6

In most of the Union republics, where there was not a single pre-school institution before, hundreds of thousands of children now attend nursery schools, kindergartens, summer and winter playgrounds. For example, in 1962 there were 2,228 kindergartens and nursery schools with an enrolment of 167,900 children in Uzbekistan, 2,832 kindergartens and nursery schools with an attendance of 185,100 children in the Kazakh S.S.R., 1,120 kindergartens and nursery schools with a contingent of 102,100 children in the Byelorussian S.S.R., etc.

The network of pre-school institutions has expanded particularly rapidly in rural areas. For example, since 1927 the number of rural kindergartens and combined nursery schools and kindergartens has increased more than 94-fold, the number of children in them—nearly 92-fold, and teachers—200-fold. Most of the country's summer children's playgrounds belong to collective farms and are operated at their expense.

Kindergartens are taught by specially-trained teachers. In 1962 their number exceeded 311,800. The summer and winter children's playgrounds employ many thousands of teachers.

CONTENT AND ORGANISATION OF PRE-SCHOOL EDUCATION

The development of the network of pre-school institutions went hand in hand with that of the Soviet system of pre-school education. Before the Revolution the

content and methods of work of kindergartens were determined by individual enthusiastic educators, whereas after the October Revolution collective elaboration of pedagogical and methodological principles of pre-school education began and a special branch of pedagogical science—pre-school pedagogics—was developed.

Soviet educators proceed from the fact that children actively yield to educational influences from an early age, provided these influences are exerted with due regard for their age and abilities. Under pedagogical influences children strive to do good turns and gradually develop stable behaviour corresponding to the norms of social life.

All this makes it possible already at an early age to subject children to systematic educational influences in order to give them all-round development and prepare them for school.

The main objective of the kindergarten is proper physical development of the children by means of an appropriate regimen, hygienic surroundings, hardening, physical exercise, outdoor life, etc.

An important aspect of education in the kindergarten is the child's mental development. The kindergarten teacher consistently expands the child's mental horizon, develops his speech, i.e., teaches him to speak his mother tongue correctly; older children are taught to read simple texts and to count up to ten. In many kindergartens the children are taught a foreign language.

The moral education of children, which is equally important, includes development of the sense of the collective, friendship and comradeship, respect for parents and adults, truthfulness, accuracy and other positive qualities.

Serious attention is devoted to the aesthetic education of children. Children are taught singing, dancing, drawing, modelling and elocution.

In the kindergarten children also acquire elementary labour skills. They tend to plants and animals, do simple house chores, serve as monitors in the dining-room, and take part in mending books, toys, etc.

Games are the chief educational means in the kindergarten; from 3 to 4 hours a day are assigned to various games—impersonation, construction, didactic, active and other games. They are combined with studies organised according to a definite plan.

In the kindergarten children are educated in groups formed according to age. There are usually three such groups—junior (3-4 years of age), intermediate (4-5 years) and senior (5-7 years of age). The educational work in each group is determined by the characteristics of the given age.

The basic propositions of the Soviet methods of educating children of pre-school age are stated in the Kindergarten Regulations, the guiding document on pre-school education, and the Manual for the Kindergarten Teacher.

In 1960 the R.S.F.S.R. Academy of Pedagogical Sciences and the U.S.S.R. Academy of Medical Sciences elaborated the Programme of Education in the Kindergarten in accordance with the aims of all-round development of children.

The kindergartens work in intimate contact with the parents. The teachers tell the parents about the work of the kindergartens, and give them advice on how to bring up their children at home, help to set up home conditions favourable to the development of children and their preparation for school.

Kindergarten workers are given substantial help in their educational and organisational work by parents' committees elected by general meetings of the parents.

General Secondary Education

The state of school education is one of the most important indications of society's cultural development, most definitely and concretely characterising the state's educational policies. The exploiter classes have used education as one of the means of consolidating their ascendancy over the masses of working people all through the history of human society.

Describing the condition of the English schools for workers' children F. Engels wrote in the first half of the 19th century that "since the bourgeoisie is concerned about the existence of workers only in so far as it needs them, small wonder that it gives them only as much education as is in its interests". This characterisation is still valid for modern society divided into antagonistic classes.

It is a different matter in socialist society. The 1958 Law on the school notes that "the socialist state builds its school so that it may serve the people, give knowledge to the working people and favour the development of all of the people's talents".

DEVELOPMENT OF THE NETWORK OF SCHOOLS AND INCREASE IN THE PUPILS' CONTINGENTS

In the U.S.S.R. schooling has assumed wide scope. In Soviet time the network of schools and the enrolment therein have sharply increased. The increase has been particularly significant in the Central Asian and Transcaucasian republics.

A comparison of the data presented in the following tables makes this perfectly obvious.

Number of General Educational Schools of All Types and Number of Pupils
(in the Beginning of the School Year)

	School year					
	1914-15 (Within present borders)	1925-26	1940-41	1950-51	1960-61	1962-63
Number of general educational schools of all types (in thousands) . . .	*123.7*	*103.8*	*199*	*222.1*	*224.4*	*226.7*
Including:						
Elementary, seven-year, eight-year and secondary schools . . .	123.7	103.3	191.5	201.6	199.2*	197.6*
Schools for adults and young workers	—	0.5	7.3	20.5	25.2	29.1

* The decrease in the number of schools in 1961 and 1962 was due to the merging of some of them for the purpose of creating a richer educational material base.

Continued

	School year					
	1914-15 (Within present borders)	1925-26	1940-41	1950-51	1960-61	1962-63
Number of pupils in general educational schools of all types (in millions)	*9.7*	*10.3*	*35.6*	*34.7**	*36.2*	*42.4*
Including:						
Elementary, seven-year, eight-year and secondary schools . . .	9.7	10.2	34.8	33.3*	33.4	38.5
Schools for adults and young workers	—	0.1	0.8	1.4	2.8	3.9

* The decrease in the number of pupils in elementary, seven-year, eight-year and secondary schools compared with the 1940-41 school year was due to the fact that from the 1949-50 school year the schools enrolled children born during the war when the birth rate was much lower.

Number of Pupils in the General Educational Schools of the Union Republics (in thousands)
(in the Beginning of the School Year)

	School year				
	1914-15 (Within present borders)	1940-41	1950-51	1960-61	1962-63
U.S.S.R.	*9,656*	*35,552*	*34,752*	*36,187*	*42,445*
Including:					
R.S.F.S.R.	5,684	20,633	19,399	20,398	23,687
Ukrainian S.S.R. . .	2,607	6,830	7,134	6,722	7,964

Continued

	School year				
	1914-15 (Within present borders)	1940-41	1950-51	1960-61	1962-63
Byelorussian S.S.R. .	489	1,737	1,555	1,382	1,577
Uzbek S.S.R.	17.5	1,315	1,331	1,552	1,871
Kazakh S.S.R. . . .	105	1,158	1,365	1,821	2,286
Georgian S.S.R. . . .	157	767	738	703	804
Azerbaijan S.S.R. . .	73	695	660	725	868
Lithuanian S.S.R. . .	118	380	430	453	509
Moldavian S.S.R. . .	92	440	481	545	656
Latvian S.S.R. . . .	172	242	295	293	324
Kirghiz S.S.R. . . .	7	334	343	398	489
Tajik S.S.R.	0.4	315	322	393	457
Armenian S.S.R. . .	35	333	319	338	411
Turkmen S.S.R. . .	7	252	224	279	339
Estonian S.S.R. . . .	92	121	156	185	203

The transition to compulsory eight-year schooling envisaged by the 1958 Law on the School was effected in three years. By the end of 1961 some 40,000 elementary and seven-year schools were reorganised into eight-year schools. This made it possible to carry eight-year schooling into effect in a number of districts as early as the 1961-62 school year. During the 1962-63 school year eight-year schooling was introduced throughout the country.

The general public is greatly helping the local Soviets and public education bodies in setting up conditions to carry universal education into effect. Shops, gymnasiums and boarding-schools are built, study-rooms for physics, chemistry, biology and mechanical drawing are equipped, propaganda on the importance of raising the educational standards of children and youth is carried on

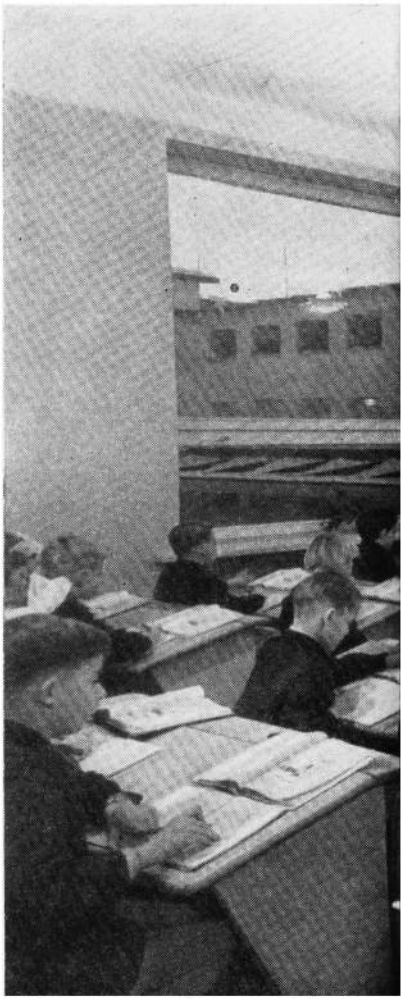
Lesson at the Communism Collective Farm school, Pyanj District, Tajik S.S.R.

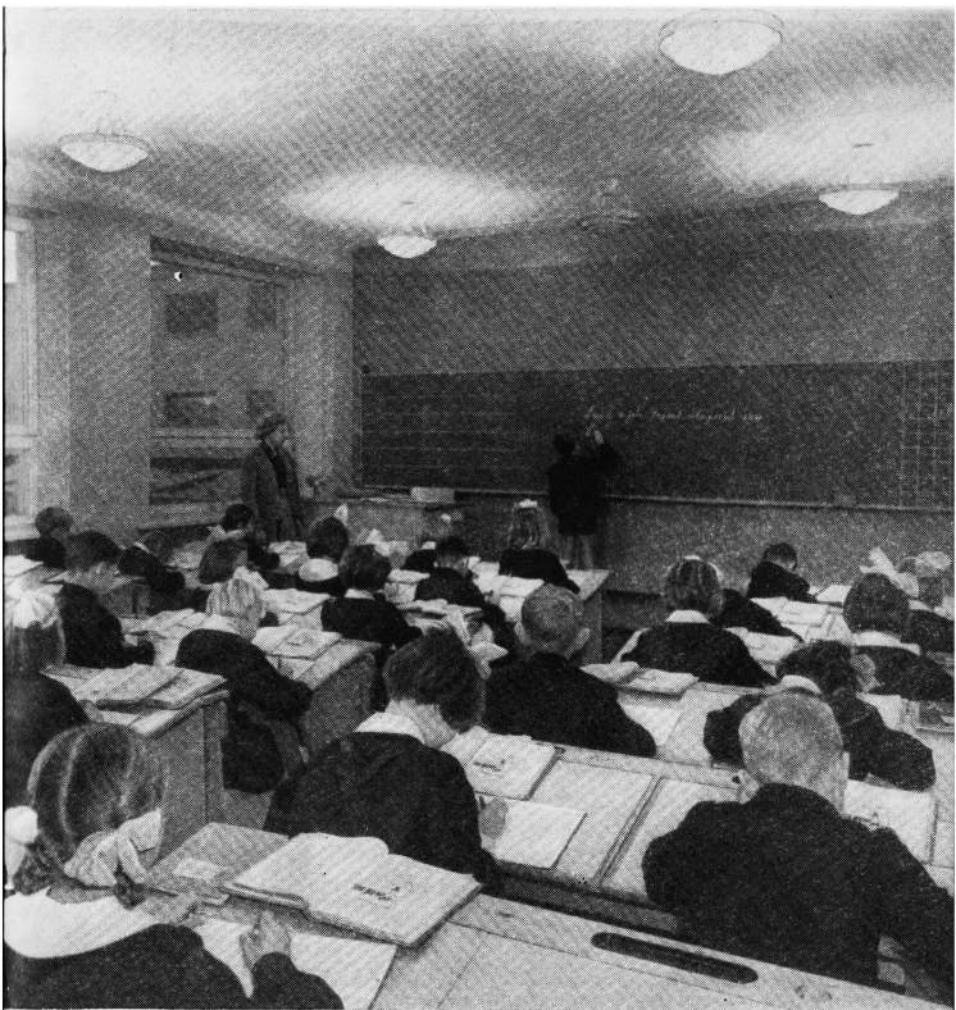
and the funds for universal education are distributed—all with the direct participation of the general public.

A number of ten-year schools have been reorganised into eleven-year polytechnical schools with production training.

The network of general educational schools for the youth working in the national economy is rapidly expanding. During the 1962-63 school year close to 3,900,000 persons extended their education in evening schools for young workers and collective farmers. 344,000 young workers of town and country have completed their seven-year schooling and 384,000—their secondary education in the last two years alone. In the 1962-63 school year the total number of boarding-school pupils and pupils of prolonged-day schools and groups exceeded 2.4 million.

New curricula and programmes have been elaborated in accordance with the 1958 Law and are being





Lesson at one of new schools in Tallinn (Estonian S.S.R.)

the library of Moscow secondary school N 2

gradually introduced into schools since the 1959-60 school year. During the 1962-63 school year grades 1-8 have been working according to the new requirements; the upper grades will complete their transition to the new curricula and programmes during the 1963-64 school year.

MAIN PRINCIPLES OF ORGANISATION OF THE TRAINING AND EDUCATIONAL PROCESS

The 1958 Law provides that the Soviet general educational school must turn out educated people, well versed in the fundamentals of science and at the same time capable of systematic physical labour. It educates in the youth a striving to be useful to society by actively participating in the production of social requisites.

The education which the Soviet youth receive prepares them for practical activity in various branches of the national economy and for entering the higher school. The composition and scope of subjects in the Soviet school are determined by its aims, i.e., for an all-round development of the personality and serving the interests of social progress.

The leading principle of instruction, training and education in the Soviet school is the connection of all the activities of the school with life, work and communist construction. In the eight-year school this connection is ensured by a combination of general and polytechnical training and extensive participation of the schoolchildren in socially useful work within their abilities; in the upper grades this connection is achieved by combining the general and polytechnical training with production training and productive labour in the national economy.

In the Soviet school the general, polytechnical and vocational forms of education are closely interconnected.

General education provides the fundamentals of knowledge about nature and society, which every person needs regardless of his future vocation. Every member of society must, not only be literate and have a perfect command of his mother tongue, but must also have some

knowledge of literature and history, geography and astronomy. To master the modern techniques, the pupils are given fundamental knowledge of physics, mathematics, chemistry, biology and, especially, of such branches of modern science as structure of matter, radioelectronics, polymers, laws of controlled development of living organisms, etc.

To understand modern production, one must additionally have extensive polytechnical training. Polytechnical training acquaints the pupils with the most important branches of modern industrial and agricultural production, gives them skills in handling the most common materials and tools, develops the necessary labour habits in them and prepares them for a conscious choice of vocation.

Soviet schooling is distinguished for its high scientific level. The school strives to teach subjects which reflect the latest achievements of science and favour formation of a scientific world outlook in the pupils. The system and sequence of presenting the subject-matter of each subject are determined by the logic of the particular science and such didactic rules as proceeding from the simple to the complex, from the concrete to the abstract. These requirements also govern the system of distribution of the subjects forming the content of general education through the years of schooling and their internal interdependence.

One of the most important principles of instruction, training and education is the unity of theory and practice. The school strives to give the pupils knowledge which is of practical significance and as closely as possible connected with life. This ensures development of thinking, the powers of observation, initiative and habits of independent creative work.

On the basis of knowledge acquired by the pupils the

teachers endeavour to lead them to broad ideological generalisations, to impart to them high moral views in keeping with the spirit of communist morality, to develop in them habits of discipline, accuracy, labour efficiency, good behaviour, a sense of friendship and comradeship and other high moral qualities.

The school curricula and programmes are compiled and approved by the ministries of education of the Union republics. The ministries enlist the services of the country's scientific and pedagogical institutions, individual scientists and experienced teachers.

Various changes are introduced into the curricula and programmes of the schools in the Union republics, although basically the curricula and programmes are the same throughout the country. The pupils of these schools are taught in their native language (during the 1962-63 school year the teaching was conducted in 66 languages). One of the additions to the curriculum is a course in the native language and national literature. The courses in history and geography are supplemented by basic information on the history of the particular people and the geography of the republic. The curricula of all national schools include courses in Russian (from the second grade) and courses in Russian classical and Soviet literature (from the fifth grade). The Russian schools in the non-Russian republics teach the language of the people of the given republic. The citizens living in the national republics have the right to choose a school taught either in Russian or the native language.

The pupils of Soviet schools must study all subjects in the curriculum. Only pupils who make satisfactory progress in all subjects are promoted to the next grades and only those who have successfully passed all the examinations required are granted a certificate, at-

testing graduation from an eight-year school, or a secondary school diploma. This ensures high and uniform educational standards for all children and adolescents.

What is the content of school education in the U.S.S.R.? What subjects do Soviet schoolchildren study and to what extent do they study them?

The answer to this question is in some measure given in the following table which shows the number of hours allotted to each cycle of subjects in the eight-year and secondary schools during the complete course of training.

	Eight-year school (grades 1-8)	Secondary school with production training (grades 9-11)	Total for 11 years of training
Humanities			
Russian language and literature	2,541	339	2,880
History and Constitution (in the upper grades—social science)	391	405	796
Foreign language	465	261	726
Drawing	248	—	248
Music and singing	283	—	283
Total	3,928	1,005	4,933
Natural Science and Mathematics			
Mathematics	1,663	452	2,115
Physics and astronomy	249	421	670
Chemistry	142	265	407
Biology	391	117	508
Geography	286	148	434
Mechanical drawing	71	78	149
Total	2,802	1,481	4,283

Continued

	Eight-year school (grades 1-8)	Secondary school with production training (grades 9-11)	Total for 11 years of training
Physical culture	566	226	792
Labour training	1,315	—	1,315
Production training	—	1,356	1,356
Grand total	8,611	4,068	12,679

The foregoing table shows that Soviet schoolchildren devote considerable time to studying subjects in the field of the humanities, natural science and mathematics, knowledge of which is indispensable to educated people of our time.

EIGHT-YEAR GENERAL EDUCATIONAL POLYTECHNICAL SCHOOL

The eight-year school is the first stage of secondary education. The school year begins September 1 and ends May 31 for grades 1-4, June 18 for grades 5-7, and June 25 for grade 8. It is divided into terms each of which is followed by a vacation, namely, autumn vacation—November 5-9, winter vacation—December 30-January 10, spring vacation—March 24-31, and summer vacation—after the end of the school year. The school year lasts a total of 35 weeks for grades 1-4, 38 weeks for grades 5-7 (of these, 2 weeks are assigned to social production practice), and 39 weeks for grade 8 (of these, 2 weeks are assigned to social production practice and 2 weeks to prepare for and take final examinations).

Curriculum of the Eight-Year School in the R.S.F.S.R.

Nos.	Subjects	Number of hours a week per grade								Total hours	
		1	2	3	4	5	6	7	8	Weekly	Annual
1	Russian	12	12	12	10	6	5	3	2	62	2,184
2	Literature	—	—	—	—	2	3	2	3	10	357
3	Mathematics	6	6	6	6	6	6	6	5	47	1,663
4	History. Constitution of the U.S.S.R.	—	—	—	2	2	2	2	3	11	391
5	Nature study	—	—	—	3	—	—	—	—	3	105
6	Geography	—	—	—	—	2	2	2	2	8	286
7	Biology	—	—	—	—	2	2	2	2	8	286
8	Physics	—	—	—	—	—	2	2	3	7	249
9	Chemistry	—	—	—	—	—	—	2	2	4	142
10	Mechanical drawing	—	—	—	—	—	—	1	1	2	71
11	Foreign language*	—	—	—	—	4	3	3	3	13	465
	Total	18	18	18	21	24	25	25	26	175	6,199
12	Drawing	1	1	1	1	1	1	1	—	7	248
13	Singing and music	1	1	1	1	1	1	1	1	8	283
14	Physical training	2	2	2	2	2	2	2	2	16	566
	Total	4	4	4	4	4	4	4	3	31	1,097
15	Vocational training	2	2	2	2	3	3	3	3	20	709
16	Socially useful labour	—	—	2	2	2	2	2	2	12	426
17	Social production practice in grades 5-8 (days)	—	—	—	—	6	6	12	12	—	180
	Total	2	2	4	4	5	5	5	5	32	1,315
	Grand total	24	24	26	29	33	34	34	34	238	8,611

* If conditions permit, the studies of a foreign language may be started earlier.

The eight-year school gives the pupils more general educational and polytechnical knowledge than did the seven-year school. Its curriculum, as is evident from that of the schools of the R.S.F.S.R., allots 7,296 hours to general educational and polytechnical subjects as against the 6,256 hours of the seven-year school. 39.5 per cent of the school time is allotted to the humanities —the Russian language and literature, history, the Constitution of the U.S.S.R. and a foreign language, 32.5 per cent of the time is devoted to mathematics, natural sciences (physics, chemistry, biology, physical geography) and mechanical drawing, 15.3 per cent of the time is given to all forms of vocational training and socially useful work, 6.5 per cent of the time—to physical training, and 6.2 per cent of the time—to drawing, music and singing.

Essentially the same subjects are taught in the eight-year school as are in the seven-year school, but their teaching has been reorganised. The Russian language is taught for a period of eight years which makes it possible for graduates to reach the necessary level of knowledge. The course in literature in grades 5-8 acquaints the pupils with the outstanding works of Russian national folklore, the Russian classical and Soviet literature. In grade 4 the children receive initial information on the history of their Soviet Homeland. A systematic study of history begins in grade 5 with a course in history of the ancient world. The history of the Middle Ages is taught in grade 6; an elementary course of history of the U.S.S.R., including brief information on the social and state system of the U.S.S.R., as well as information on the most important events in modern and latest history of foreign countries, is taught in grades 7 and 8.

In the study of foreign languages special emphasis is laid on teaching the pupils to carry on simple conver-

sation on everyday and social and political subjects, and to read texts based on the material studied.

The geography taught in grades 5-8 consists of an elementary course in physical geography, geography of the continents and geography of the U.S.S.R.

Mathematics is taught in the following sequence: grades 1-5—arithmetic, grades 6-8—algebra and geometry. Serious attention in the training of schoolchildren is devoted to the ability to make various calculations, to use calculation tables and to compute surfaces and volumes of geometrical bodies.

An elementary course in mechanical drawing is taught over a period of two years (grades 7 and 8).

Unlike the practice in many countries of the world, where the first stage of nature study consists in a complex course of general natural science, independent school subjects—physics, chemistry and biology—are taught in the Soviet eight-year school. This makes it possible to arrange the subject-matter more systematically and logically and to employ methods of teaching deriving from the peculiarities of the subject.

Compared with the seven-year school, the course of physics studied in grades 6-8 treats of mechanics and electricity in somewhat greater detail, deals with sound and light phenomena and provides initial information on the structure of the atom. The amount of required laboratory work has also been increased. An extended course in chemistry in grades 7 and 8 makes it possible to acquaint the pupils with the most important laws of chemistry and their application in various branches of production.

In the eight-year school it has become possible to give the pupils a relatively complete course in biology. Over a period of 3 years the schoolchildren study the vegetable and animal kingdoms and take a course in

human anatomy and physiology, which the seven-year school did not offer.

The studies of the fundamentals of natural science and mathematics are the first important stage in polytechnical education and preparation of the pupils for labour activity in the sphere of material production. While studying the fundamentals of such sciences as physics and chemistry the pupils acquaint themselves with the construction and operation of various mechanisms, machines and other technical devices, and learn to understand and explain the simplest production processes. The same may be said of their studies of biology, as regards agricultural production.

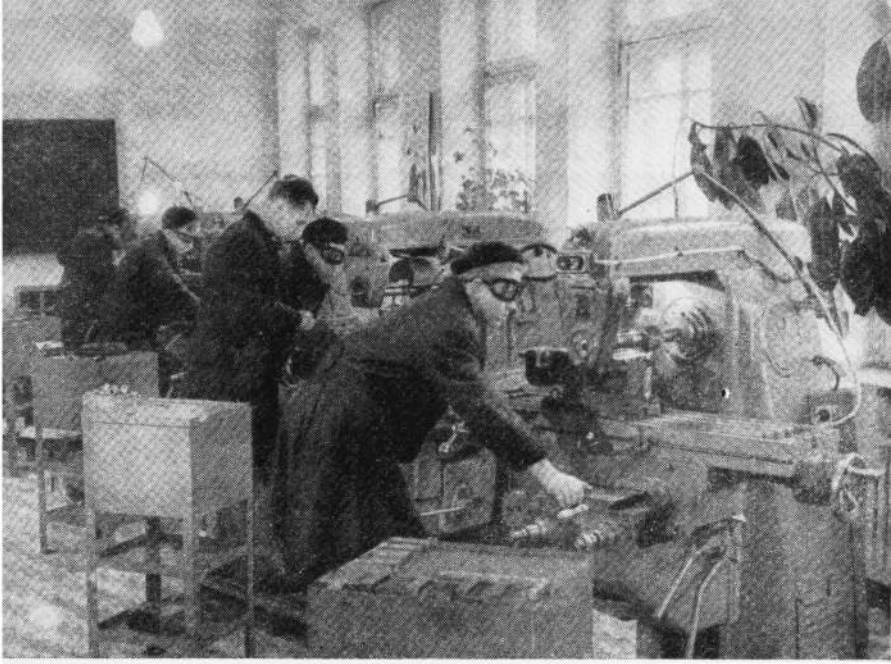
The second stage of polytechnical education is vocational training which prepares the schoolchildren for labour psychologically and practically.

In grades 1-4 children acquire initial skills of working with paper, cardboard and other materials, and learn to sew and grow flowers and vegetables.

In grades 5-8 the schoolchildren receive vocational training in school machine and joiner's shops and on school experimental plots. The pupils acquire the necessary knowledge and skills in manual and mechanical processing of metal and wood, and in installing and repairing an electric system and household electrical appliances; they also grow various agricultural crops and tend to young animals on cattle farms; the girls additionally take a course in housekeeping.

The system of vocational training includes socially useful labour. Two hours a week are assigned to it in grades 3-8. Two weeks of production practice are added at the end of the school year in grades 5-8, three hours a day in grade 5 and four hours a day in grades 6-8.

The forms of socially useful labour of the schoolchildren are quite varied. They include work in school



School workshop

shops where the children make useful things for the school, everyday chores at school and at home, participation in ameliorating the settlement, district or town, harvesting, etc.

Excursions to industrial enterprises, electric power stations, state and collective farms, etc., play an important part in the educational process. They acquaint the pupils with modern production and help them to get a better idea of various vocations. Participation of the pupils in the work of various circles—mathematics, physics, chemistry, drawing, young naturalists, technicians, agricultural experimenters, radio, automobile and tractor, etc.—also greatly contributes to the learning process.

The physical education of the pupils is inseparably connected with all of the training and educational work

in the school. The physical education lessons are conducted in each grade twice a week, two hours each, according to a single state programme. The schools have well-equipped gymnasiums and playgrounds. Outdoor extra-class mass sports activities, trips to the country, hikes, skiing, etc., are widely practised.

The pupils are given an aesthetic education at the lessons of drawing, singing, literature and other subjects, as well as in the process of extra-class and extra-school work. In the eight-year school drawing is taught in grades 1-7 (one year more than in the seven-year school), music and singing—in grades 1-8 (two years more than in the seven-year school).

The pupils go to theatres, museums, art exhibitions and cinemas individually and collectively.

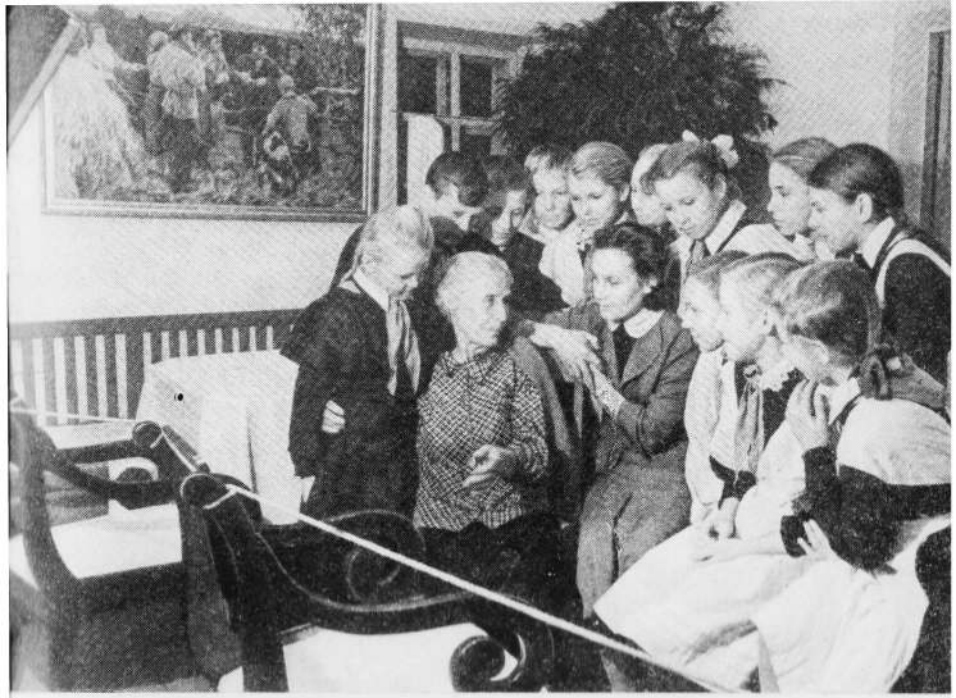
Eighth-grade schoolgirls at a cooking lesson

The basic form of educational work in the eight-year school is the lesson. The lesson lasts 45 minutes. The recesses between lessons last 10 minutes; the second recess (after the second lesson) lasts 30 minutes, to give the children a chance to take lunch in the school canteen.

During the lesson the subject-matter is presented and the pupils' knowledge is consolidated and tested. The teachers strive to make the pupils learn consciously and solidly, to maintain their interest and develop their independence in the studies. Since the effectiveness of training in large measure depends on the activity of the pupils, the latter devote a good deal of time to filling various assignments, working with books and didacting material, observations, experiments and practical work, talks on questions of interest to them and connected with the subject, etc.

The literature lessons are supplemented with theatre and motion-picture shows, the history lessons—with visits to museums and acquaintance with sources, foreign language lessons—with evening parties conducted in

Moscow schoolchildren in the Fine Arts Museum



Schoolchildren visiting the Lenin House-Museum in the village of Shushenskoye, Siberia, where Lenin was in exile in 1897-1900

these languages (recitation of poetry, theatricals, etc.).

Excursions, nature study by observation, practical work, labour assignments, and lectures using films, the radio, television and concerts are some of the forms of educational work. The variety of forms of presenting the subject-matter serves to activate the pupils and to develop their independence, initiative and creative abilities.

Home assignments whose scope has been established by the Ministry of Education for each school year serve to consolidate the knowledge and skills acquired by the pupils during the lessons.

The teachers conduct various extra-class work with the pupils. They supervise different circles, including amateur art circles, participate in organising and conducting athletic competition and other athletic events, tourism through the native land, school festivities, recreation parties, talks and lectures, discussions and readers' conferences. In addition to collective forms of extra-class work the teachers also give individual instruction to the most gifted pupils who display an interest in certain branches of science, engineering, sports and the fine arts.

The check-up on the pupils' knowledge and skills is based on current individual quizzes. The teachers systematically question the pupils and evaluate their knowledge, give them tests, and on the basis of the results grade them for the term. The Soviet school uses a five-mark system of evaluation of knowledge with "5" as the highest mark.

The annual mark given at the end of the year is based on the term marks. Pupils making normal progress are promoted, whereas those with marks below "3" (satisfactory) in any subject are given additional assignments and are re-examined before the beginning of the new school year. Pupils failing at the re-examinations are left in the same grade for the second year. After the end of the school year the eighth-grade pupils take graduation (final) examinations in Russian (or the mother tongue) and mathematics. In the rest of the subjects the pupils are given marks with due account taken of their current and term marks.

The pupils making normal progress in all subjects and passing the examinations are given certificates attesting their graduation from an eight-year school; these certifi-

Drawing lesson

cates entitle them to continue their education in the upper grades of secondary general educational, secondary special or vocational-technical schools.

The development of the Soviet school and the future transition to compulsory eleven-year schooling necessitate further improvement of training and educational work in the school in order that all pupils may make normal progress. Soviet teachers are conducting research in this field.

Significant in this respect is the experience of Rostov School No. 1 where scarcely any pupils are ever left in the same grade for the second year. This is largely due to the fact that all the teachers of this school are very exacting in their work. The system of teaching in this school is distinguished for detailed treatment of every element of the lesson, mutual aid of the teachers and a creative attitude to the methods of teaching. The experience of the Rostov school is not singular. Hundreds of schools located in different parts of the country have achieved similar success. A good illustration of this is the work of the teachers of Lipetsk Region whose pupils make very good progress. The Lipetsk teachers continuously improve their training and educational methods. They rationally combine teaching new material with checking on and consolidating the previously taught material. Various forms of pupils' independent work are widely used during the lessons with the result that they are now given much less home work.

Continuous consolidation and deepening of the pupils' knowledge is ensured by extensive use of commented exercises during the lessons. The scope of such work is determined by the teacher; the first to be commented upon is that which has been poorly learned.

The use of various forms of pupils' independent work during the lessons has made it possible to evaluate their

knowledge in the form of individual lesson marks. This form of grading activates the pupils during the lessons and increases their responsibility for the results of their work.

SECONDARY GENERAL EDUCATIONAL POLYTECHNICAL SCHOOL WITH TRAINING IN PRODUCTION

The secondary polytechnical school with training in production offers the young graduates of the eight-year school a complete secondary education and vocational training for work in one of the branches of the national economy or culture. Its graduates are granted the right to enter any school of higher learning.

The course of studies in secondary schools with training in production lasts 3 years. The school year is divided into two semesters, the first—from September 1 to December 29 and the second—from January 11 to June 25 (including 4 weeks to prepare for and take final examinations). The autumn, winter and spring vacations are the same as in the eight-year school. Thus the school year for grades 9, 10 and 11 of urban and rural secondary schools lasts 39 weeks.

In the complete secondary school the school time is distributed according to cycles of subjects as follows: humanities—literature, history, social science, economic geography and foreign language—30 per cent, natural science—physics, chemistry, biology and astronomy—mathematics and mechanical drawing—31.7 per cent, training in production (theoretical and practical) and productive labour—33.3 per cent, and physical training—5 per cent of the time. Moreover, 2 hours a week are assigned in each grade to elective subjects (engineering,

fine arts, sports, etc.). The elective subjects are aimed at satisfying as fully as possible the pupils' individual interests.

The following are examples of curricula of Russian urban and rural secondary schools with training in production common in the R.S.F.S.R.

Curriculum of Urban Secondary School with Training in Production

Nos.	Subjects	Number of hours per week according to grades			Total hours	
					Per week	Per year
		9	10	11		
1.	Literature	3	3	3	9	339
2.	Mathematics	4	4	4	12	452
3.	History	2	3	4	9	335
4.	Social science	—	—	2	2	70
5.	Economic geography	—	2	2	4	148
6.	Physics	4	4	2	10	382
7.	Astronomy	—	1	—	1	39
8.	Chemistry	2	3	2	7	265
9.	Biology	3	—	—	3	117
10.	Mechanical drawing	2	—	—	2	78
11.	Foreign language	2	2	3	7	261
12.	Physical culture	2	2	2	6	226
	Total	24	24	24	72	2,712
13.	General technical subjects, training in production (theoretical and practical) and productive labour	12	12	12	36	1,356
	Grand total	36	36	36	108	4,068
14.	Electives	2	2	2	6	226

Curriculum of Rural Secondary School with Training in Production

Nos.	Subjects	Number of hours per week according to grades			Total hours	
					Per week	Per year
		9	10	11		
1.	Literature	4	3	4	11	338
2.	Mathematics	5	4.5	5	14.5	445
3.	History	3	4	4	11	338
4.	Social science	—	—	2	2	64
5.	Economic geography	—	3/2	2/3	5	155
6.	Physics	5	5	3/2	12.5	380
7.	Astronomy	—	1	—	1	30
8.	Chemistry	2/3	3	3	8.5	261
9.	Biology	4			4	120
10.	Mechanical drawing	3/2			2.5	75
11.	Foreign language	3	3	3	9	276
12.	Physical culture	2	2	3	7	216
	Total	31	28	29	88	2,698
13.	Fundamentals of agricultural production and training in production (theoretical and practical)	5	8	7	20	614
	Total	36	36	36	108	3,312
14.	Seasonal work in production:					
	days	54	54	18	—	126
	hours	324	324	108	—	756
	Grand total					4,068
15.	Electives	2	2	2	6	184

As the foregoing curricula show, two-thirds of all the school time (about 2,750 hours) is assigned to studying general educational and polytechnical subjects, and one-third (about 1,350 hours) to theoretical and practical training in production and productive labour.

The content of general and polytechnical training is the same in all secondary schools, but the training in production varies with the chosen speciality.

The course in literature acquaints the pupils with the history of Russian literature of the 19th and 20th centuries, the literatures of the peoples of the U.S.S.R. and the outstanding works of foreign writers of different epochs.

Courses in the history of the U.S.S.R., modern and latest history of foreign countries and a course in social science are taught in grades 9-11. Economic geography of the U.S.S.R. and foreign countries serves to broaden the general education of the pupils and to prepare them for participation in the economic and political life of the country.

The foreign language requirements are: a certain command of spoken language and an ability to read and write texts containing not more than 15 per cent unfamiliar words, with the aid of a dictionary, and texts consisting of material studied in school, without a dictionary.

The teaching of mathematics provides the pupils with knowledge and skills necessary to prepare them for practical activity and for studying physics, chemistry and mechanical drawing, as well as for the higher school; it also acquaints them with certain general scientific ideas and methods of mathematics which are of paramount general educational and practical importance.

The secondary school course in mathematics consists of two parts: 1) algebra and elementary functions, and 2) geometry. The study of the properties of trigonome-

tric functions is included in part 1 (algebra) and that of their geometric application—in part 2 (geometry).

The programme in physics envisages studies of the fundamentals of mechanics, theories of heat, electricity, optics and acoustics, molecular physics and structure of the atom. The pupils studying physics learn about the various forms of energy used in modern production, and scientific principles of its transformation, transmission and utilisation in industry and agriculture, the physical principles of construction and operation of hydraulic turbines, wind and steam engines, electric motors, etc. They also acquire some knowledge of the physical principles of certain processes of automation, operation of various types of relays, transmitters and other instruments, mechanical processing of materials (cutting, founding, forging, stamping and rolling), as well as other knowledge and skills which help in their polytechnical and vocational training.

The course in astronomy gives the pupils a picture of the structure and development of the Universe and acquaints them with problems of astrophysics and practical application of astronomy.

The course in chemistry includes fundamentals of organic and inorganic chemistry. In addition to the metals studied in the lower grades (calcium, aluminium and iron) the programme acquaints the pupils with copper and chromium as metals widely used in modern technology. At lessons of organic chemistry the pupils learn about the main classes of organic compounds, their genetic connections and their role in the life of plants, animals and man, as well as their use in the national economy. Considerable attention is devoted to the study of high-molecular synthetic substances (polymers).

The secondary school also offers a course in fundamentals of general biology, which gives the pupils knowledge of the main natural laws governing the

individual and historical development of organisms, and the methods of utilising these laws in man's practical activities. Considerable attention is devoted to metabolism which underlies all the other vital processes and development of organisms.

The methods of instruction in secondary schools with training in production generally coincide with those used in the upper grades of the eight-year school. However, the secondary school practises more widely various forms of pupils' individual work in study-rooms, laboratories and libraries, and utilises review lectures, discussions, debates and other forms of extra-class work.

As regards the general education of the pupils, it must be emphasised that the polytechnisation of training and the bringing of the school closer to life and production are conducive not only to all-round development of the pupils, but also to uncovering their individual inclinations. A number of schools offer elective training in the upper grades, i.e., the pupils choose, in accordance with their inclinations, one of the four following departments —physico-technical, chemico-technical, natural science and agronomy, and the humanities. Large cities—like Moscow, Leningrad, Kiev, Ivanovo and Irkutsk—have secondary schools with a physico-mathematical trend.

Of considerable interest is the experience of the Siberian scientists who have launched an extensive search for mathematical talent among the rising generation. An All-Siberian Physico-Mathematical Olympiad was conducted for the first time in 1962. It was open to all comers—schoolchildren, pupils of secondary technical schools and young workers. The first tour was conducted by correspondence. Problems aimed at revealing not the level of knowledge, but resourcefulness and a spark of talent, were sent all over Siberia and the Far East. The second tour was timed to the end of the school year and was conducted in 20 regional and district centres over

the vast territory from the Urals to the Pacific. The winners of the second tour were invited to a two-month summer school near Novosibirsk where they attended lectures delivered by scientists, acquainted themselves with the laboratories of research institutes and at the same time had a good vacation. The same summer school was the site of the third, final tour. The winners of the Olympiad were not only given good presents, but some of them were also granted the right of non-competitive admission to the physico-mathematical faculty of Novosibirsk University, while others were advised to continue their studies in a special physico-mathematical school.

For children with artistic talent there are special schools of music, the arts and dancing where general education comprising eight-year or secondary schooling is combined with special training.

Vocational training of the pupils is a new and pedagogically very complicated problem of the Soviet secondary school. In solving this problem it is most important to avoid artisanship. This is achieved by organising vocational training on the basis of modern engineering, technology and best models of labour.

The polytechnical principle in vocational training requires establishment of connections between the general educational subjects and training in production, and through the latter with productive labour. This means that, as the pupils acquire special knowledge in engineering and technology of a particular field they learn the natural science laws and phenomena which they need in order to understand the construction and principle of operation of the machines, and the essence of the technological processes. After learning the construction of a machine or some technological process they familiarise themselves with the other machines or apparatus in which they may encounter similar parts. With such an approach to their production training, the pupils

actively utilise their knowledge of natural science and mathematics.

The connection between the fundamentals of science and labour is effected in many ways. Sometimes the knowledge of physics, chemistry and mathematics enables the pupils to gain a direct insight into the labour process. For example, at the mechanical drawing lessons the pupils make a drawing of a part and then use this drawing in their work in the shop. In such a case we see a direct connection between training and labour. More frequently, however, the connection is indirect. This occurs when the general educational knowledge is connected with the labour process through general technical and special disciplines. For example, while operating a lathe, the pupil does not use his knowledge of Newton's third law, but while studying the science of machinery he has repeated resort to this law, particularly, to understand the effects of the different forces in the machines.

The vocational training of pupils embraces many occupations. The schools' choice of those occupations depends on the needs in labour power of the given economic area and the existing material and technical base.

Most of the vocations now recommended to schools may be divided into the following main groups:

(1) Universal occupations with a wide range of vocational possibilities—fitters, turners, milling-machine operators, grinders, electricians, tool-makers, etc.

(2) Occupations of servicing specialised equipment in large-scale and mass line production—assemblymen, operators in various processes, operators handling simple machines, etc.

(3) Building trades—fitters, building-machine operators, electricians, welders, etc.

(4) Occupations requiring not only labour skills, but also considerable theoretical knowledge—draughtsmen,

chemical laboratory technicians, technicians of laboratories of mechanical tests of materials, technical inspectors and technicians of controlling and measuring laboratories, calculating machine operators, etc.

(5) Agricultural occupations—operators of machines used in crop production, operators of machines used in livestock production, tractor drivers with fitter's skills, and electricians of rural electric power plants.

(6) A special group of public service and cultural specialities. Many schools train librarians, teachers for pre-school institutions, workers of commerce and public catering, etc.

Each school specialises in several, usually two or three specialities. For practical training in production each school is attached to an industrial enterprise, collective farm, or some institution. In some cases several schools are attached to one large enterprise or one school is attached to several enterprises.

Pupils are admitted to the upper grades in accordance with their interests and inclinations. After the eighth grade pupils choose their own school and apply for admission. All entrants are given a medical examination to determine their fitness for work in the chosen occupation.

The vocational training of the pupils includes studies of general technical and special subjects and practical training in production. Of the total time (about 1,370 hours) 25-35 per cent is allotted to theoretical, laboratory and practical training in specialities of industrial production and 30-45 per cent in agricultural specialities. The general technical subjects in urban schools are: mechanical engineering, electrical engineering, mechanical drawing; in rural schools—a complex course of fundamentals of agricultural production. Technical and technological subjects varying with particular vocations are also taught. The studies are conducted in special study-rooms and laboratories set up in schools or at the

Chamber music ensemble is rehearsing at the Central Music School of the Moscow Conservatoire

industrial enterprises. The rest of the time is spent on productive labour.

The training in production is established with due regard for the peculiarities of production and the specialities being learned, the labour laws for adolescents and the requirements of sanitation and hygiene.

In industry the pupils work two days a week, 4 hours a day all through the 3 years of training. At some enterprises which have higher skill requirements the pupils

work in their specialities continuously for 3-4 weeks.

In agriculture the pupils work during the seasons—1-2 weeks in autumn and winter, 2-3 weeks in spring and 3-4 weeks in summer.

In urban schools the practical training in production is, as a rule, conducted in two stages. The basic labour methods and vocational operations are learned by systematic exercise and types of work gradually increasing in complexity during the first stage (grades 9 and 10).

The training is supervised by teachers of general technical and special subjects, and is conducted in permanent study groups (numbering 12-17 pupils) in production training shops, on training plots and in special training shops set up at industrial enterprises. For such occupations as building, transport, etc., training grounds and other facilities are set up. A training shop in which training is combined with production assignments (turning

Scene from Minkus's ballet *Don Quixote* staged by the school-leavers of the Bolshoi Theatre ballet school

out useful production) is considered the best form of organisation of training.

Some urban schools organise initial training in production on the basis of production training shops of vocational-technical and secondary technical schools, and directly in production shops in the form of individual and team training. Inter-school production training shops are set up for secondary schools situated far from enterprises.

In the 11th grade the training in production is conducted at industrial enterprises, on equipment operating at normal speeds and in compliance with all technical requirements, norms and corresponding wages. Participating in the production of the enterprise the pupils continue to accumulate production experience and to study new technology and advanced methods and organisation of labour. Their work is supervised by highly qualified worker instructors.

Friendly relations have long existed between the Krasnodar School No. 47 and a factory of electric measuring instruments. The factory trained 113 pupils in 1957 alone. Since then more than 1,000 schoolchildren have been trained at this factory as turners, milling-machine operators and tool-makers. Many of them are still working there and are taking correspondence courses in special higher and secondary schools; others are getting a higher technical education at regular higher technical schools. Fifteen experienced engineers and technicians who supervise the theoretical and practical work of the pupils in the shops of the factory of electric measuring instruments are, not only their teachers, but also their solicitous tutors. Training sections have been set up in three of the factory's shops where the schoolchildren assemble instruments under supervision of foremen. A methods council organised at the enterprise considers questions of production training and labour

Senior pupils are assembling tape-recorders

education. In addition to workers and foremen, the council consists of the principal of the school, teachers, representatives of public organisations, and parents. The council is headed by the chief engineer of the factory.

The practical production training in agriculture is also conducted in two stages: on school experimental plots and farms in the 9th grade, and in the fields of state and collective farms in grades 10 and 11. Pupils' production teams and experimental training groups on state and collective farms are the best forms of training.

The pupils of grades 9-11 have to take part in the work of the teams; participation of the pupils of the 7th and 8th grades is voluntary.

The pupils' teams are usually organised on production principles. Specialised and complex teams are organised for the entire agricultural year, for example, teams of maize growers, beet growers, vegetable growers, gardeners, vine-growers, cattle-breeders, machine operators, builders, etc. Temporary teams or groups of pupils are sometimes formed for general chores, for example, for cleaning grain and preparing it for sowing, for transporting and applying fertiliser, snow retention, construction and maintenance of irrigation canals, for harvesting, etc. The teams, as a rule, comprise pupils of one grade (12-15 pupils). The teams of machine operators, builders and cattle-breeders are organised on a voluntary basis with due regard to the age characteristics and physical development of the pupils.

It is on this principle, for example, that the pupils' team of the Novo-Alexandrovka Secondary School No. 1, Stavropol Territory, is formed. The team is composed of 4 groups of pupils of grades 7 and 8. There are specialised groups of pupils of grades 9-11; these are groups of machine operators, maize-growers, gardeners, vine-growers, poultry-breeders and one group of silkworm-breeders. The pupils of grades 6-7 form groups

of rabbit-breeders headed by pupils of the upper grades.

The work in the pupils' team of the Serebryanyie Prudy School (Moscow Region) is organised somewhat differently. This team is composed of 10 groups of machine operators, 7-8 pupils each; the work of these groups is supervised by experienced tractor drivers and teachers. An area totalling 90 hectares has been permanently assigned to the pupils' team in the crop rotation fields of the state farm. The pupils are taught exclusively mechanised labour as tractor and machine operators, or assistant combine operators on tilling, sowing, cultivating and harvesting machines. The plan of the team's work envisages such distribution of labour and training over the year as would enable the pupils to cover the complete cycle of agricultural work in two years.

The time allotted to obligatory production training is distributed as follows: winter agricultural work—one week, spring sowing—two weeks, summer work—four weeks, autumn work—two weeks, i.e., a total of 54 days as envisaged in the curriculum. The pupils work three hours a day on tractor-drawn machinery and spend another three hours on maintenance and repair of the machinery and working on cattle farms and experimental plots.

The groups work under supervision of instructors—tractor drivers and machinists. Before the beginning of each workday the pupils are instructed in safety measures and are given assignments by teachers of special subjects in plant-growing, agricultural engineering and cattle-breeding. Each assignment is calculated for approximately 2-3 days.

Experimental training farms are an effective form of combining training with productive labour; such farms first came into existence in rural secondary schools of

Ryazan Region and have now spread all over the country. The experimental training farms usually have the following facilities:

(1) school experimental training plot tilled mainly by pupils of grades 1-7, while upper grade pupils do strain testing;

(2) production training plot assigned by the collective farm to the school for 8-10 years, depending on the crop rotation practised by the collective farm; mainly upper-grade pupils work on this plot;

(3) production training cattle farm assigned to the school by the collective farm by agreement. Pupils of grades 6 and 7 work on this farm tending to the cattle, while upper grade pipils ensure complete care of the cattle according to the school course in fundamentals of cattle-breeding;

(4) machine shop and machines belonging to the school.

On the experimental training plot the pupils work under the supervision of teachers of biology and the fundamentals of plant growing and also teachers of elementary grades. The upper grade pupils are paid for their work according to its quantity and quality.

Research and experimentation have become very popular on the experimental training farms. For example, close to 40 varieties of potatoes received from different parts of the country were tested on the production training plot of the Solotcha School, Ryazan Region. By crossing Voronezh and Rumanian varieties of maize the pupils of the Yushta School, Ryazan Region, have developed early maturing hybrid seeds. The pupils of the Krylovskaya Secondary School No. 2, Krasnodar Territory, are conducting production experiments in growing copious crops of maize in the fields of the Way to Com-

munism Collective Farm. Their work is supervised by instructors of the Kuban Agricultural Institute. The pupils' production team of School No. 7 of Vyselki District are growing, by assignment from Academician V. Pustovoit, sunflower seed on the Berzanskoye State Farm. In 1961 the pupils harvested 2.4 tons of sunflower (with a high oil percentage) per hectare from an area of 134 hectares.

Work on the experimental training plots of the production training farms does not cease in winter; the pupils work on snow retention and before the beginning of field work repair the agricultural machinery and implements in the school shops. On the cattle farms the pupils study the feeding rations and the system of their application, and watch the growth of and weight gains in calves.

The following was the average 1962 summer workday of the pupils of the Sapozhok School, Ryazan Region. The schoolchildren lived in a well-appointed tent camp. Reveille—7:00 a.m., setting-up exercise, wash-up, bathing in river, cleaning-up the sleeping tents, and general assembly. The workday began at 8:00 a.m. after breakfast. Before the beginning of work the practice supervisor explained the importance of the forthcoming work and its technique. Rest period—11:00 a.m.-1:00 p.m.; the pupils bathed in the river, took sun-baths, read periodicals and played games. Those who had autumn examinations prepared for them in special rooms equipped with all necessary visual aids. Lunch followed by quiet hour and tea—1:00 p.m.-3:30 p.m. Work on experimental training farm—4:00-6:00 p.m. Dinner—8:00 p.m. Dinner was followed by a recreation period (motion-picture show, dancing, group games, excursions, lectures, preparation of materials for school agricultural exhibition, manufacture of visual aids for the study-rooms of biology and fundamentals of agriculture). During leisure hours the pupils went to the forest for berries and mush-

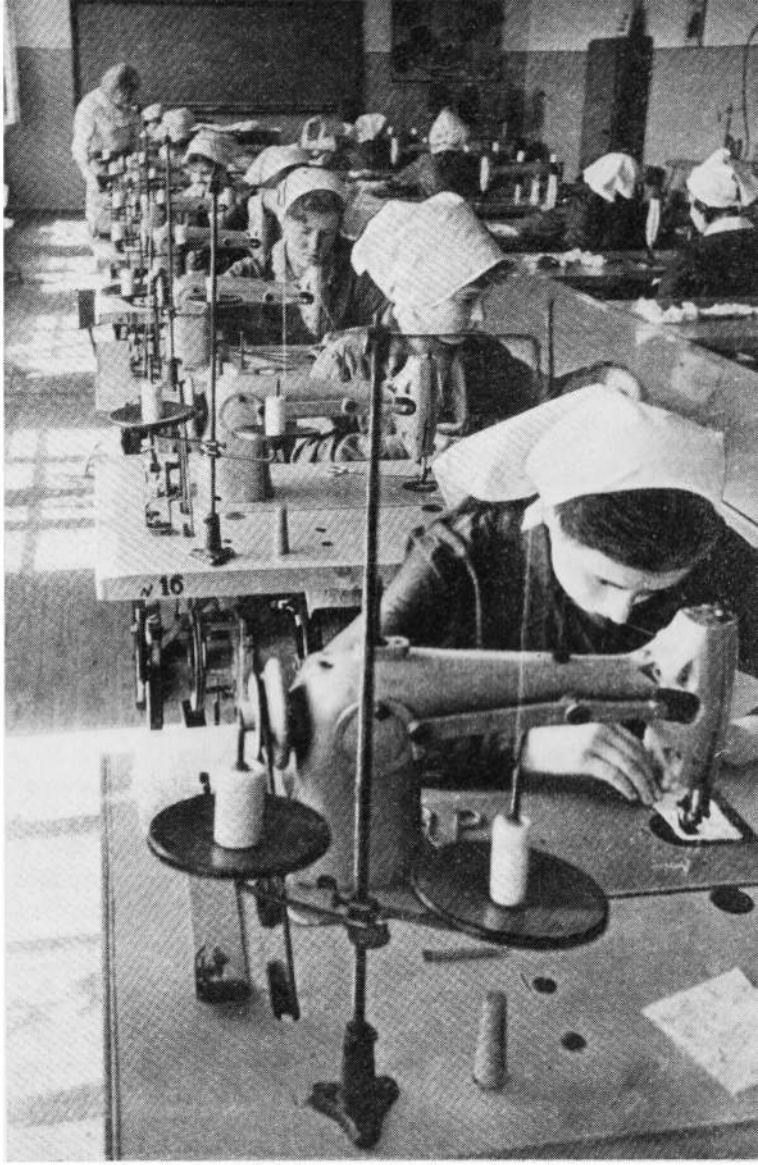
rooms, took part in athletic contests and gave amateur talent shows and concerts for collective farmers.

The rural general educational schools train a good replacement for the workers of socialist agriculture. Thus, of the 22,000 graduates of the rural schools of Krasnodar Territory 12,000 went to work on state and collective farms in the last three years. Mariet Vaikok, member of a school team, has become a group leader of the Lenin's Path Collective Farm, Teuchezhsky District. In 1961 her group harvested 15.2 tons of maize per hectare. The graduates of Secondary School No. 6, Novo-Pokrovsky District, went to work on the Way to Communism Collective Farm and have made it one of the best.

The vocational training of pupils in various non-production occupations is conducted in the process of socially useful labour at institutions and industrial enterprises. The training is completed by a period of individual probation under supervision of skilled workers.

The upper grade pupils whose work creates material values are paid for their work. This serves as a material incentive. However, the teachers seek to develop their moral incentive, a striving to be as useful to society as possible, to fulfil their assignments to the best of their ability, etc. The money earned by the pupils is spent, as a rule, collectively, i.e., on tourist trips, purchase of materials and equipment for extra-class activities, theatre tickets, etc.

Graduates of secondary schools with training in production take examinations for a secondary school diploma and tests in their chosen vocation. The young people who have passed the examinations and qualification tests are given, in addition to their diplomas, certificates attesting their speciality, qualification rating or title. The pupils who have made outstanding progress in their studies are decorated with gold and silver medals.



Secondary school sewing shop

The secondary school with training in production has become a veritable smithy where skilled personnel for the national economy is forged. More than 2,100,000 young graduates of secondary general educational schools went to work in industrial enterprises, on construction, on state and collective farms, in various institutions and organisations during 1959-63.

BOARDING-SCHOOLS AND PROLONGED-DAY SCHOOLS

An important part in educating the rising generation in the Soviet Union is played by *boarding-schools* established by decision of the Twentieth Congress of the Communist Party (1956). Their aim is as fully as possible to utilise the advantages of public education. In the boarding-schools the children lodge, board, study, work and rest. They may spend Sundays and holidays at home.

Children are admitted to boarding-schools by request of their parents or guardians. The first to be admitted are children of single mothers, war and labour invalids, orphans and children in whose families the conditions necessary for education are lacking. The board and lodging is paid by the children's parents on the basis of their earnings. Orphans and children of large and low-income families are supported by the state.

The Soviet state and the general public set up the most favourable conditions for the life, training and education of the children in boarding-schools. The schools are situated, as a rule, in healthful and beautiful localities, and are well equipped. They have study-rooms for physics, chemistry, biology, mechanical drawing, science of machinery, electrical engineering and domestic science; production-training wood-working, metal-working and sewing shops; gymnasium, library and read-

Boarding-school in the Lenin Collective Farm, Uzbekistan

ing-room, rooms for studying music and various circles, etc., playgrounds, experimental training plots and farms. The number of wards in a group and, consequently, pupils in a class does not exceed 30. For work, studies of foreign languages and production training the classes are usually divided into two subgroups.

The curriculum of boarding-schools somewhat differs from that of the regular public schools. In addition to the core subjects envisaged by the curriculum of the general educational school, many boarding-schools have introduced elective subjects on which each grade spends about 6 hours a week. The electives include foreign languages which begin to be studied in the first grade,

rhythmics, dancing, music and painting, cutting and sewing as well as participation in various circles. The lessons of physical culture, labour, drawing and singing take place in the afternoon.

In the boarding-schools many problems of training and education have arisen in a different light. New methods and forms of organisation of the educational process are coming into being in the course of their solution. The Moscow and Leningrad boarding-schools are gradually doing away with home assignments in the elementary grades. The teaching staff of the Uryupinsk Boarding-School (Volgograd Region) is striving to develop in the children of the upper grades an ability to work independently, for which purpose they are extensively utilising the lecture method and seminars, and have introduced a system of special tests. In grades 9-11 there are no special supervisors. The pupils of these grades themselves serve as assistant supervisors in the lower grades. All questions of school life are decided by the pupils themselves. A system of two-hour lessons is used for the core subjects (Russian and mathematics) in the upper grades of Moscow Boarding-School No. 12 and Kaluga Boarding-School No. 2; this system makes it possible to utilise various methods of training more extensively, to do more practical work at the lessons, eliminate the multiplicity of daily subjects and reduce the daily amount of home assignments.

All the training and education in the boarding-schools is based on a consistent combination of instruction with socially useful labour. The pupils do various self-service chores: they act as monitors in the dining-rooms, clean up the classrooms, bedrooms and rest-rooms, lay in firewood, help in the kitchen, and put in order their own clothes and footwear. They also actively participate in planting greenery in towns, help the state and collective farms in guarding and harvesting crops, look after the

old and the sick, serve as monitors in kindergartens, collect metal scrap and medicinal plants, work in post offices, etc.

The upper grade pupils do their production practice in industrial enterprises and on farms. The boarding-schools display great concern about setting up production training bases, choose vocations which are promising and interesting to young people, acquaint their pupils with the latest achievements in engineering, and enlist the services of the best workers, foremen and technologists.

The Uryupinsk Rural Boarding-School has its own farm where the pupils go through the entire cycle of training in the science of machinery, agro- and zootechnics. They do their production practice on a nearby collective farm. The same system of training the pupils for work in agriculture is used in the Lodeinoye Polye Boarding-School, Leningrad Region. In this school the upper grade pupils become tractor drivers and operators of machinery used in cattle-breeding. The pupils are assigned work with due regard to their age characteristics. In summer, the work is combined with health-promoting measures.

The boarding-schools are also in a position to organise extensive extra-class activities and to utilise their pupils' leisure for their physical and aesthetic development. A proper daily regimen, i.e., nourishment, morning setting-up exercises, physical culture lessons and extra-class athletic activities, contests and walks, hiking, working outdoors, etc., are all conducive to better health and physical development.

The boarding-school pupils are given an aesthetic education during the entire educational process and particularly during the lessons of their native language and literature, singing and drawing. In this field, too, the boarding-schools have many additional opportunities to

improve the supervision of the pupils' extra-class reading, to vary their work with the children, to organise extensive studies of music, etc. The boarding-schools devote special attention to developing the pupils' individual abilities and endowments.

The education of the children is based on combining the best elements of family training with the influences of the collective.

Drawing on the experience of Anton Semyonovich Makarenko,* the teachers strive to find the best forms and methods of educating the pupils under the specific boarding-school conditions.

A. S. Makarenko based his pedagogical system on pedagogy of collective action which he had developed. He regarded the children's collective as part of Soviet society with which it is connected by common aims and common labour. To the well-known thesis of bourgeois educators "Personal interest is social interest" he opposed the formula "Properly understood social interest is my personal interest", which formula is based on the nature of the socialist system. Hence his conclusion that in the children's collective it is necessary to achieve a unity of common and personal aims and at the same time to ensure every personality the possibility of retaining its individuality and of developing its abilities.

Makarenko theoretically substantiated and backed by extensive personal experience a number of propositions

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* A. S. Makarenko (1888-1939)—outstanding Soviet educator and writer. He summed up and described his many years of educational experience in the books *The Road to Life, Learning to Live, A Book for Parents* and *On Education*, and in a number of articles and stories. Many of the principles of the pedagogical system developed by Makarenko are widely used by educators in the U.S.S.R. and abroad.

The Foreign Languages Publishing House has published in English (French and Spanish) A. S. Makarenko's following books: *The Road to Life, Learning to Live* and *A Book for Parents.*

Boarding-school wards (the town of Abakan, Khakassia, Southern Siberia)

underlying the pedagogy of collective action. He emphasised the importance of constant development of the collective and of drawing it into new promising studies and socially useful labour activities. At the same time he highly esteemed the positive traditions of the collective and insistently recommended their consolidation and development. He also deemed it necessary to develop the spontaneous activity and independence of the children's collective, to demand that the collective establish proper co-operation between the older and younger children, that every child play a definite part in the life of the collective, learn to lead and obey.

Makarenko assigned the leading role in the educational institution to the pedagogical staff with not only a common ideology, but also a common style and methods of work. The work of the staff must be based on exacting demands and deep respect of the pupils.

The use of these and many other propositions of Makarenko's pedagogical system creatively modified to fit the present conditions offers extensive opportunities for effective educational work in boarding-schools.

The pupils of boarding-schools comprise a united children's collective which actively participates in all of the school's life, in the organisation of the living and working conditions, and in the struggle for better progress in the studies and for higher discipline.

The children's collective in a boarding-school is headed by a Pupils' Council elected by a general meeting of the pupils. The council elects from among its members a chairman, his deputies, a secretary and chairmen of commissions.

The Pupils' Council considers and decides all current questions of the life of the collective of the boarding-school pupils. The active members of the collective usually participate in the discussions and settlement of the most important questions. The council usually sets

up an editorial board for the wall newspaper and several commissions—educational, physical culture, cultural, economic, etc. The commissions are, as a rule, composed of pupils responsible for work in circles, athletic teams, various groups of pupils, etc.

School grades, groups of pupils living in one house or being members of one circle or one athletic section form primary collectives. These collectives elect from among their own members monitors, team leaders, chairmen, etc., who become representatives of their groups and work with the Pupils' Council.

A Young Pioneer unit and a Komsomol organisation are set up in each boarding-school where they play the leading role in the life of the children's collective.

The boarding-schools employ the best and most experienced teachers who are well versed in child psychology, know the age characteristics of children, are able to combine love and respect for children with exactingness in requirements and to exert a positive influence on them by personal example. They see to it that the pupils do their own homework, organise and conduct various extra-class activities, and are responsible for the order, the regimen and the children's health.

Parents' committees are organised for permanent and close connections between boarding-schools and the children's parents; the committees are elected at parents' meetings.

The boarding-schools get help from various public organisations. Each boarding-school is helped by a committee composed of representatives of the town or district Soviet, Party, Komsomol and trade union organisations, and representatives of patron industrial enterprises, state and collective farms.

The Volgograd Boarding-School No. 3 has a lot of friends. Workers, engineers and technicians of the industrial enterprises and construction sites of Kras-

noarmeisky District continuously visit the boarding-school and help the teachers. The leaders of 12 Young Pioneer detachments are members of the Komsomol and workers of Volgograd enterprises.

In the city of Kansk, Krasnoyarsk Territory (Siberia) the collective of the cotton mill is patron of the boarding-school. Some of the children are orphans, but they do not feel forsaken. Workers of the mill treat them like parents, take them home for vacations and holidays, and display concern about their studies and work.

In the Yaransk Boarding-School, Kirov Region, there are 28 subject, art, technical and other circles. Half their number is supervised by workers and employees of the patron enterprises and the pupils' parents.

The *prolonged-day school* is a general educational, usually eight-year, school in which the pupils stay under observation of teachers all day long. Prolonged-day schools began to come into existence in the U.S.S.R. on the initiative of the general public, and since September 1960 have been included in the system of public education. The tuition in all these schools is free, and children of low-income families are given two hot meals a day.

In the schools of this type the morning is spent in the usual manner, but in the afternoon children do their homework, dine, rest and engage in the activities of various circles—all under supervision of teachers. Children of grades one and two and weak children take a nap during the day.

The leisure time activities include physical culture and sports, various contests, walks, hikes, excursions, readers' conferences, motion-picture shows and discussions of the films, active games and other forms of recreation. The teachers devote considerable attention to organising the pupils' self-service.

In the prolonged-day schools, as in the boarding-schools, the training is most expediently combined with

socially useful labour and recreation, and the education and training are brought as closely as possible to life.

During the 1962-63 school year the boarding-schools and prolonged-day schools and groups numbered more than 2.4 million pupils. The accumulated experience of work in this type of educational institutions attests their great future.

EDUCATIONAL WORK IN GENERAL EDUCATIONAL SCHOOL

The most important aspect of the activities of the Soviet school is education of the pupils in the spirit of the requirements of the moral code of builders of communism formulated in the new Programme of the Communist Party of the Soviet Union. The school educates in the pupils such high moral qualities as humanism, patriotism and proletarian internationalism, industry and discipline, honesty and fairness. The school considers it a matter of sacred duty to educate the rising generation in the spirit of peace and friendship among the nations.

The Soviet school regards education as an integral process composed of influences of the school, family and pupils' organisations.

The Model Programme of Educational Work in the School elaborated by the R.S.F.S.R. Academy of Pedagogical Sciences is now being tested by a number of schools; the Programme contains differentiated recommendations for the content, forms and methods of educational work with pupils of grades 1-4, 5-8 and 9-11.

In the Soviet school moral education is administered in two ways. The first way is utilisation of the ideological wealth of scientific knowledge taught at lessons and during extra-class work, as well as the organising influence of mental work. The second way is utilisation of

the experience of the child's behaviour, his relations with the people around him.

In order to educate the children's moral qualities it is necessary that they should treat other people according to the standards of social morality from the very earliest age. One of the basic conditions for moral education in the Soviet school is therefore such organisation of the child's life and activities as would enable the child to build his behaviour in accordance with moral standards.

The older the child, the more important it is for him to realise the moral principles which must regulate his behaviour. Adolescents and, especially, youths no longer merely learn about moral standards, but make them a habit.

One of the most efficient methods of education used in the Soviet school is the multifarious, collective, socially useful activity of the pupils. While working collectively, children and adolescents learn about mutual aid, responsibility and discipline, leadership and subordination, persistence and exactingness of themselves and others. Collective, socially useful labour offers great opportunities for the development of the schoolchildren's initiative and spontaneous activity and at the same time teaches the schoolchildren to combine their personal interests with the interests, requirements and rules of the collective and of society as a whole.

Collective activity implies, not only labour, but also rest and recreation of the pupils, walks and hikes, discussions of books they have read, attendance of motion-picture shows, theatre-going, amateur art activities, etc. Education in and through the collective does not infringe upon the interests of the personality, but, on the contrary, enables the personality to attain greater development.

Ideological education is administered by means of information on events of domestic and international life, talks and lectures on ethical questions, discussions on

social and moral problems which agitate the pupils' minds, etc. Positive examples of labour and social activities are widely utilised to influence the pupils. The use of rewards and punishment rests on pedagogical considerations and the observance of the important principle of Soviet pedagogics—exactingness combined with respect for the pupil. The system of rewards includes praise by the teacher or principal, a written appreciation announced to the class or to a general meeting, prizes and testimonials. The forms of punishment include reprimand before the class or in a written order by the principal of the school, summoning before the Pedagogical Council and low mark for behaviour. Corporal punishment in any form is prohibited.

In the Soviet school the pupils are educated by teachers with active participation of Komsomol and Young Pioneer organisations.

The mass organisation of schoolchildren from 10 to 15 years of age is the Lenin All-Union Organisation of Young Pioneers which numbers more than 18.5 million children. Upon joining the Young Pioneers the schoolchild solemnly and under festive circumstances pledges to love his Motherland fervently, to live, study and struggle according to V. I. Lenin's precepts, in the manner taught by the Communist Party. He vows to obey the laws of the Young Pioneers of the Soviet Union.

These laws are as follows:

"A Young Pioneer loves his Motherland and the Communist Party of the Soviet Union. He aspires to join the Komsomol.

"A Young Pioneer reveres the memory of those who gave their lives in the struggle for the freedom and prosperity of the Soviet Motherland. A Young Pioneer studies diligently and is disciplined and courteous.

"A Young Pioneer loves to work and safeguards public property.

"A Young Pioneer is a good comrade; he is solicitous about his juniors and helps his seniors.

"A Young Pioneer is brave and does not fear any difficulties.

"A Young Pioneer speaks the truth and highly esteems the honour of his detachment.

"A Young Pioneer hardens himself by daily exercise.

"A Young Pioneer loves nature; he is a protector of greenery, and useful birds and animals.

"A Young Pioneer is a model for all children."

The work of the Young Pioneers is conducted on a basis of extensive spontaneous activity and initiative of all schoolchildren. The Young Pioneers are organised in sections, detachments, and units; they elect their own section leaders, and detachment and unit councils. Each Pioneer must be active in the work carried on by his unit, detachment and section and must develop his abilities in the field of his choice.

The Young Pioneer organisation grants awards for successful studies, labour and social activities. The best Young Pioneers are awarded testimonials; particularly distinguished Pioneers, Pioneer detachments and units, and Pioneer leaders are registered in the Book of Honour of the Lenin Young Pioneer Organisation.

Brought up in a collective from early childhood the Young Pioneers learn to live by its interests, to be solicitous about their comrades and helpful to other people.

Young Pioneers have extensive and multifarious interests. In order to satisfy them as fully as possible they organise rallies, contests, talks, exhibitions of their works in engineering and fine arts, games, hikes to nearby places and distant excursions; they meet with writers, scientists, foremost workers and other prominent people, correspond with schoolchildren of foreign countries, etc.

The activities of the Young Pioneers are supervised by the Komsomol. Each detachment is headed by a member

of the Komsomol who acts as a senior Pioneer leader, tutor, senior friend of the Pioneers and organiser of their spontaneous activities. The detachment leader works in close contact with the teachers and is a member of the Pedagogical Council of the school. Senior Pioneer leaders are trained in special branches of pedagogical schools. Troop leaders are assigned from among the best members of the school Komsomol organisation and patron industrial enterprises.

The school Komsomol organisation works not only with the Young Pioneers. Members of the Komsomol—pupils of grades 8-11—of whom there are more than three million in the country, take an active part in the life of the schoolchildren's collective and help the school to improve the moral and labour education of the pupils; they also arrange the socially useful work of the schoolchildren, etc.

A large number of books, journals and newspapers is published for the Young Pioneers and members of the Komsomol in the U.S.S.R. The central organ of the Young Pioneer organisation is the newspaper *Pionerskaya Pravda* (*Young Pioneer Truth*) which was founded in 1925. The newspaper publishes letters and notes of its young readers about school life, the work of Young Pioneer organisations, conducts games, discussions, etc. Teachers, writers, scientists and foremost workers and collective farmers often write for the newspaper. Young Pioneer newspapers are published in many Union republics in the native languages; there is a total of 23 newspapers; they include the *Zvezda* (*Star*) and *Yuny Leninets* (*Young Leninist*) in the Ukraine, the *Zorka* (*Reveille*) and *Pioner Byelorussii* (*Young Pioneer of Byelorussia*) in the Byelorussian S.S.R., the *Pioner Vostoka* (*Young Pioneer of the East*) and *Leninskaya Iskra* (*Lenin's Spark*) in the Uzbek S.S.R., the *Druzhnye Rebyata* (*Friendly Children*) and *Pioner Kazakhstana* (*Young Pio-*

neer of Kazakhstan) in the Kazakh S.S.R. There are also monthly literary and popular science magazines, such as the *Pioneer* (*Young Pioneer*), *Kostyor* (*Bonfire*), etc.

Some 120 Komsomol newspapers with a circulation of more than 8.2 million copies, and dozens of magazines are published for the youth. Komsomol newspapers and magazines are published in all the Union republics. The newspaper *Komsomolskaya Pravda* (*Komsomol Truth*) published since 1924 is the central organ of the Central Committee of the All-Union Leninist Young Communist League (Komsomol).

EVENING (SHIFT, SEASONAL) SECONDARY GENERAL EDUCATIONAL SCHOOL

Evening (shift, seasonal) secondary general educational schools* are intended for young working people, graduates of eight-year schools desirous of getting a secondary education and of improving their production skills without discontinuing work. These schools have a three-year course of training.

The school year in the evening (shift) secondary schools is 36 weeks, in the evening (seasonal) secondary schools—28 weeks. The final examinations in the 11th grade of these schools take three more weeks.

In the evening secondary schools the school year begins September 1 and is divided into two semesters with winter vacations, January 1-10, between the semesters.

The evening schools have the same state curriculum as all the other secondary schools. Twenty hours a week

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* The pupils of these schools, working in the first shift, attend classes in the evening, while those working in the second shift attend day classes, for which reason these schools are called shift schools. In rural areas these schools are operated seasonally in accordance with the course of agricultural work.

are allotted to studies—15 hours to lessons, 3 hours to consultations and 2 hours to elective subjects aimed at improving the skills in the pupils' particular specialities. The total school time is divided, according to cycles of subjects, as follows: 33 per cent of the time is allotted to the humanities—literature, history, social science, economic geography and foreign language; 42 per cent to science—mathematics, physics, astronomy, chemistry, biology and mechanical drawing; 10 per cent to elective subjects aimed at improving skills, and 15 per cent to individual consultations.

Curriculum of Urban Evening (Shift) Secondary General Educational School (Grades 9-11) in the R.S.F.S.R.

Nos.	Subjects	Number of hours according to grades			Total hours per week
		9	10	11	
1.	Literature	2	2	2	6
2.	Mathematics	3	3	3	9
3.	History	1	2/1	2	4.5
4.	Social science	—	—	1	1
5.	Economic geography	—	2/1	1/2	3
6.	Physics	3	3	2	8
7.	Astronomy	—	0/1	—	0.5
8.	Chemistry	1/2	2	2/1	5
9.	Biology	2/1	—	—	1.5
10.	Mechanical drawing	1/2	—	—	1.5
11.	Foreign language	2/1	1/2	2	5
	Total	15	15	15	45
12.	Elective subjects aimed at improving the pupils' vocational skills	2	2	2	6
13.	Consultations	3	3	3	9
	Grand total	20	20	20	60

In the evening (seasonal) schools for the rural youth the number of weekly hours is increased to 24, of which 19 are allotted to studies of subject-matter, three to elective subjects aimed at improving vocational skills, and two to consultations.

The reduction in school hours, compared with children's schools, is compensated for by the pupils' independent work, utilisation of their life's experience and individual aid in the form of systematic consultations. The pupils of these schools do their practical and laboratory work, not only in school, but also at their place of work, directly in production.

It is not easy to master the strenuous programme of the upper grades of the secondary school while working. However, schools of this type are very popular with the young people. Their enrolment during the 1962-63 school year exceeded 4 million.

The craving of the young working people for knowledge is not accidental. The ever increasing introduction of complex modern machinery, the development of mechanisation and automation of production, and the ever-greater use of chemistry, electronics and computers in industry and agriculture require of the young workers and farmers a good general educational background.

The entire social set-up of the country serves to stimulate the young people to extend their education and raise their cultural level. Soviet citizens actively participate in the work of the trade unions, voluntary public organisations, and the political life of the country, all of which requires extensive knowledge. The press, the radio, the films and television daily bring them news on the development of culture, engineering, science and the arts, most of which can be understood only by persons

Moscow school-leavers on Red Square in June, 1963

who have a secondary education. A large section of the young working people wants to get a higher education, and the way to it is through the evening secondary school. Last, but not least, the evening secondary school, not only offers a general education, but also helps to improve the skills of the pupils in their speciality.

The state and society are doing everything to satisfy the wishes of the members of society and are making it possible for them to get a complete secondary education. The workers and employees who are making good progress in school without discontinuing work are granted one extra day off a week and are paid 50 per cent of the day's wages. Moreover, they may take another day or two off each week without pay.

Extra-School Training and Education of Pupils

In the U.S.S.R. the children and youth are trained and educated not only in educational institutions which constitute the country's system of education. An important part is also played by extra-school establishments which satisfy the various cultural requirements of children and adolescents, develop their spontaneous activities, creative abilities and interests in different fields of science, engineering, literature, the arts and sports, and rationally organise their leisure and recreation.

SYSTEM OF EXTRA-SCHOOL ESTABLISHMENTS

All extra-school establishments can be divided into two groups depending on the scope and trend of their work; the first group includes the palaces and houses of Young Pioneers, children's sections of workers' and collective farm clubs, children's parks, recreation nooks and corners and playgrounds in recreation parks, and children's summer camps; the second group includes children's libraries and reading-rooms, stations of young naturalists and young technicians, children's tourist

bases and camps, athletic schools for children and youth, children's railways, houses of children's aesthetic education, children's theatres, etc. Central stations and methodological institutions have been set up in the Union republics for methodological supervision of these establishments.

Today the Soviet Union has more than 10,000 various extra-school establishments which are under the jurisdiction of the ministries of education and culture, trade union and other public organisations and departments. In 1962 there were 3,229 palaces and houses of Young Pioneers, 361 stations of young technicians, 275 stations of young naturalists, 167 children's excursion and tourist bases, some 40 stadiums, 174 children's parks and a number of other establishments.

ORGANISATION AND WORK OF EXTRA-SCHOOL ESTABLISHMENTS

Extra-school work is conducted in various forms and embraces a large number of schoolchildren. Its scope can be judged by the work of the Leningrad Palace of Young Pioneers whose circles and studios accommodate more than 10,000 schoolchildren. Such palaces and houses of Young Pioneers as the ones in Sverdlovsk, Tashkent, Kharkov, Minsk, Tbilisi and Riga draw thousands of Young Pioneers and schoolchildren into extra-school work.

In May 1962 the Young Pioneers of the Soviet Union celebrated the 40th anniversary of their organisation. A new Palace of Young Pioneers had been opened in Moscow by that time. Close to 50,000 members of the Komsomol worked as volunteers on the construction of this Palace. The new Palace of Young Pioneers is a monumental structure; it is situated near Moscow University

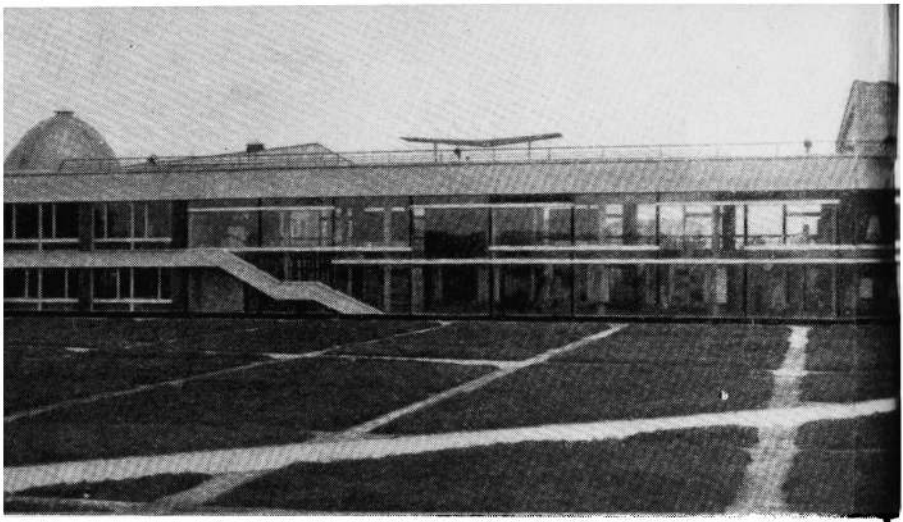
on Lenin Hills. An area of 54 hectares is occupied by 8 many-storied buildings, a park and a Parade Square. The Palace has a concert hall with a seating capacity of 1,100, a Young Pioneer theatre, extensive athletic facilities, a planetarium and a film studio. The various athletic and other facilities can simultaneously accommodate 13,000 schoolchildren. Parade Square has room for 5,000 Young Pioneers and 3,000 guests. The pedagogical staff of the Palace numbers 775 persons.

The palaces and houses of Young Pioneers have stocks of games which they allow the junior schoolchildren temporarily to take home; their staff members visit various schools and bring sets of toys with them; they also set up branches on boulevards and in children's parks, and promote mass games by correspondence.

After school hours the schoolchildren fill the study-rooms, laboratories, gymnasiums, music and art studios, lecture halls and workshops, libraries and reading-rooms of the palaces and houses of Young Pioneers. The children choose the activities they like and enjoy.

The children's participation in the activities of the various circles extends and deepens their knowledge, and lends an element of research to their work. The circles of young technicians help in polytechnical training, bring the schoolchildren closer to practical activity and develop their technical thinking and resourcefulness. The stations of young naturalists and agricultural experimenters instil in the children love for agricultural labour and impart a keen attitude to nature. The schoolchildren's experimental work is also of some importance to the national economy. The foremost schools and stations of young naturalists not infrequently introduce advanced agrotechnics and new farm crops on the neighbouring collective farms.

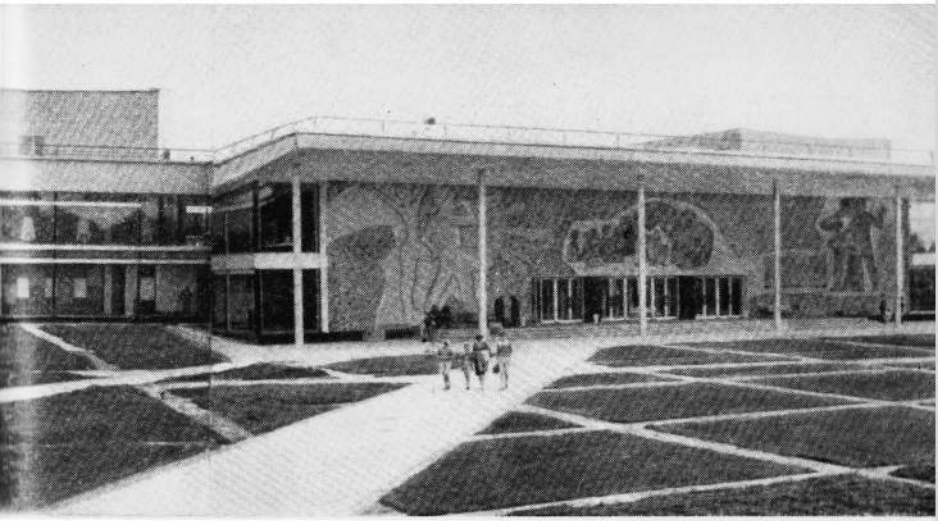
The ranks of inquisitive, curious naturalists are increasing with each passing year. On school plots they grow



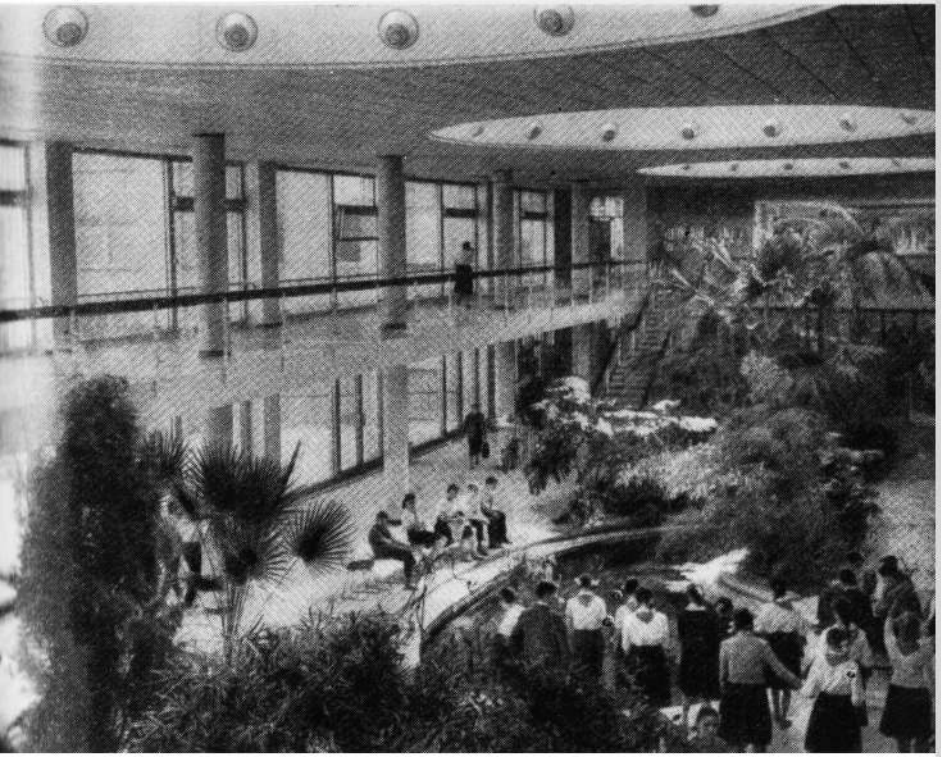
Moscow Palace of Young Pioneers and Schoolchildren

cereal and fodder crops, establish nurseries of tree and shrub seedlings, and grow new valuable varieties of plants. For example, for the last 10 years the young naturalists of the Magadan Museum of Regional Studies have grown copious crops of strawberries and currants under rigorous climatic conditions. The young naturalists of the Ozery School (Moscow Region) have produced a valuable muskmelon hybrid. On the experimental plots of the Kharkov Palace of Young Pioneers young naturalists grow rich crops of wheat, potatoes and tomatoes.

Work of schoolchildren in "skilful hands", "young technician" and "young physicist" circles has become very popular in schools and extra-school establishments. The best results of their work are demonstrated at the All-Union Exhibition of Children's Technical Endeavours in Moscow. Contests, exhibitions



Winter garden



Choreography circle lesson

Modelling is their favourite pastime

and other mass forms of work help to attract millions of Young Pioneers and schoolchildren to participation in technical activities.

Schoolchildren are permanent participants in the U.S.S.R. Exhibition of Economic Achievement. Close to 1,000 schools and hundreds of extra-school establishments showed their achievements in the Pavilion of Young Naturalists and Technicians in 1963. Some 80 of them, as well as over 300 heads of establishments and circles, and teachers were awarded diplomas of this exhibition, while 1,300 schoolchildren were decorated with the medal of Young Participant of the U.S.S.R. Exhibition of Economic Achievement.

Extra-school establishments do a good deal of work on aesthetic education of children and adolescents. Many palaces and houses of Young Pioneers (for example, in Moscow, Tbilisi, Gorky, Sverdlovsk and Tallinn) have organised children's orchestras, choirs, and ensembles of song and dance. Each palace and house of Young Pioneers has functioning circles of fine arts, elocution and drama.

School, district, city and regional reviews of children's amateur talent activities are held annually; these reviews attract hundreds of thousands of participants.

All-Union exhibitions of children's amateur art have been regularly held since 1946. The exhibitions usually display hundreds of children's drawings, sculptures, and works of decorative and applied arts.

An important part in the children's aesthetic education is played by schools of music and dancing, and schools and studios of fine arts. In 1962 there were close to 2,000 such schools in the U.S.S.R. with an enrolment of more than 350,000 children.

Very popular with the children and adolescents are the professional children's theatres (drama, puppet and shadow). In 1963 the 105 such theatres were visited by

more than 20 million young spectators. Children's matinees and concerts are held at the theatres for adults, philharmonic societies and clubs. Special children's films are made and motion-picture shows for children are arranged.

Considerable attention is devoted to the development of extra-school work in physical education. In the U.S.S.R. there are 1,965 children's athletic schools and 174 athletic schools for the youth. These schools annually train more than 350,000 schoolchildren in all forms of sport. Traditional school, district, city and regional physical culture and athletic contests are held all over the country. All-Union Spartakiads in track and field athletics, gymnastics, swimming, basketball and volleyball are conducted periodically. Millions of schoolchildren take part in the qualifying trials. The schoolchildren also participate in the Spartakiads of the peoples of the U.S.S.R.

Winter contests of schoolchildren in skiing and skating are held in addition to the summer Spartakiads. Close to 4 million schoolchildren participated in the contests for the prize of the newspaper *Pionerskaya Pravda* in the winter of 1963 in the R.S.F.S.R. alone. Many new athletic records were set during the Spartakiad. Among the schoolchildren there are masters of sports and scores of thousands with high sports ratings.

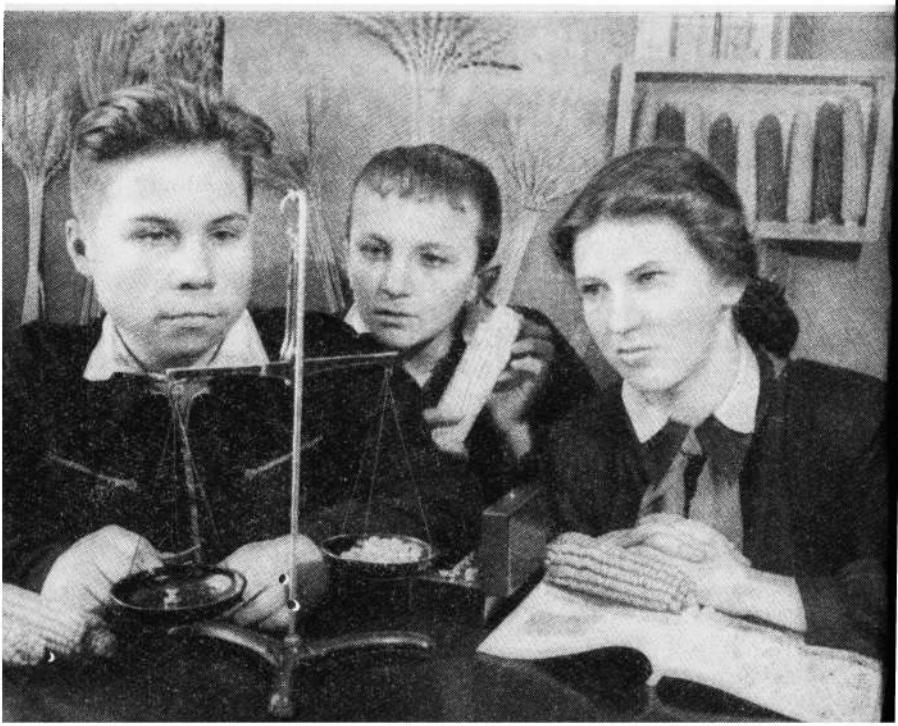
The number of playgrounds, children's swimming pools and stadiums is increasing with each passing year.

In recent years children's participation in tourism and regional studies has attained an extensive scope. More than 7 million schoolchildren annually take part in trips aimed at studying local lore.

An All-Union expedition of Young Pioneers and schoolchildren organised by the Central Excursion and Tourist Base of the R.S.F.S.R. Ministry of Public Education and the newspaper *Pionerskaya Pravda* has now

The Sverdlovsk Palace of Young Pioneers and Schoolchildren

The young naturalists

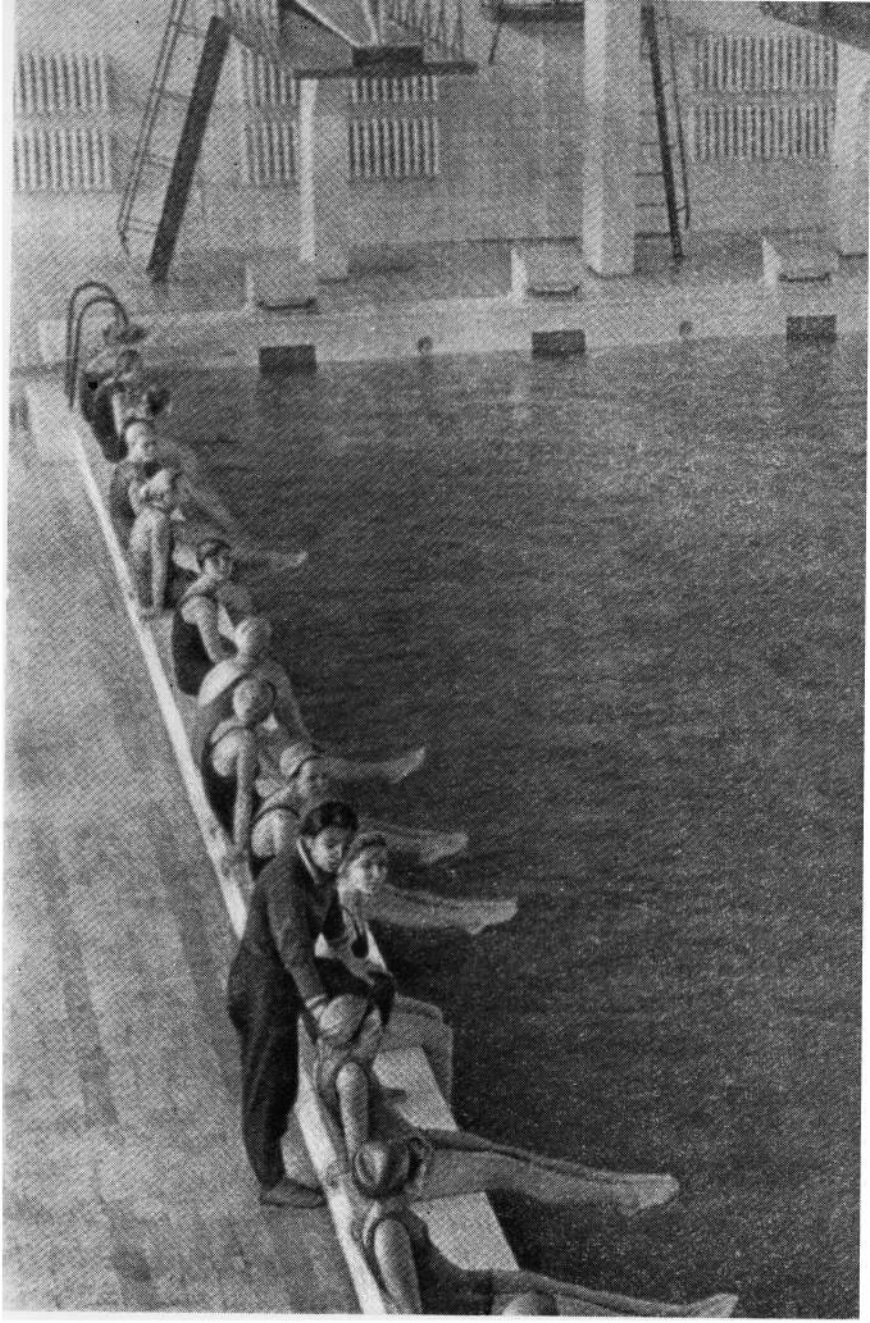


Rehearsing for an amateur art concert

Studying minerals

New building of the Palace of Young Pioneers and Schoolchildren in Alma-Ata, Kazakhstan

Swimming-pool at the Alma-Ata Palace of Young Pioneers and Schoolchildren



Wood-carving circle at the Tashkent Palace of Young Pioneers and Schoolchildren

been conducted for the fourth year. Millions of schoolchildren organised in detachments take part in the expedition. Close to 60,000 detachments search for minerals and gather medicinal plants. Some of them make finds which are of serious importance to science and the national economy. For example, the expedition detachment of one of the Zlatoust city schools has found deposits of building stone which is of industrial importance. The detachment of Khabarovsk School No. 33 has discovered auriferous strata which will be worked.

Many stations of young technicians and young naturalists, children's excursion and tourist bases, athletic

schools, palaces and houses of Young Pioneers and schoolchildren organise summer camps where schoolchildren combine their vacations with interesting forms of socially useful labour.

CHILDREN'S LITERATURE AND EXTRA-CLASS READING

Extra-class reading is very important for the general development and ideological education of the rising generation.

In the U.S.S.R. there are more than 185,000 libraries in the general educational schools with a stock of 275 million books, more than 5,000 independent children's libraries with a book stock of some 100 million volumes and many children's branches in libraries for adults. The libraries work in close contact with schools and parents and serve millions of children. They have Russian, Soviet and foreign literature, the latter both in the original languages and in translation.

The publishing of literature for children in the Soviet Union is continuously increasing and improving. Close to 67,000 books for children and adolescents with a circulation of some 2,800 million volumes were published between 1918 and 1962. From 1955 to 1961 the circulation of children's literature increased more than 36 per cent.

The literature for children is published in 70 languages, including 52 languages of the peoples of the U.S.S.R. and 18 foreign languages. Children's books are now published in languages of Soviet nationalities that had no written language before the October Revolution—Nentsy, Chukchi, Eskimos, Nogaitsy, Koryaks and many others. The classics of Russian literature and those of the peoples of the U.S.S.R., as well as the works of modern Soviet and foreign writers, are published in large editions. There

Central Children's Theatre in Moscow

are also 143 children's and young people's newspapers with an annual circulation of 3.7 million copies and 72 journals in different languages of the peoples of the U.S.S.R. with an annual circulation of 101.4 million copies.

A ten-volume colourful *Children's Encyclopedia* for older children has been published in the U.S.S.R. Translations of the *Children's Encyclopedia* are being prepared for publication in a number of countries, including Czechoslovakia, Greece and Japan.

A State Publishing House of Children's Literature (Detgiz) was established in 1933; in the course of 30 years it published more than 1,500 million volumes. In 1962 alone the publications of Detgiz included 630 titles of fiction and popular science books for children of pre-

They obviously enjoy the show

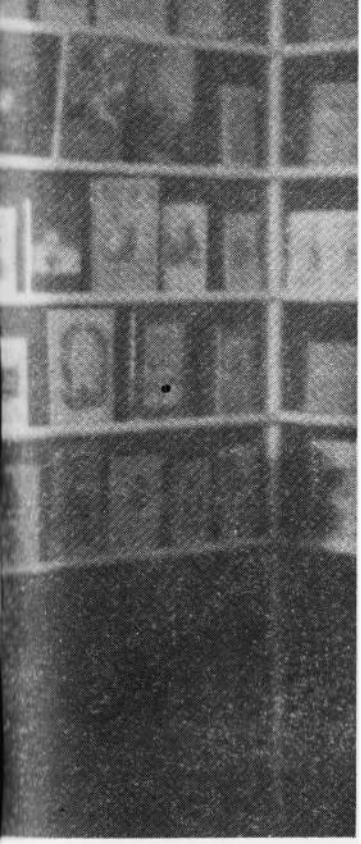
school and school age with a circulation of some 114 million volumes.

An important part in its publications is played by the "School Library" series intended especially for school libraries. This series includes the best works of classical and modern Soviet and foreign authors. In 1962 the "School Library" series comprised the publication of more than 20 million volumes for pupils of all grades. Very popular are the following series: "My First Books", "Book After Book", "Kindergarten Library", "Aids to Independent Activities of Young Pioneers and Schoolchildren", "Library of Adventures and Science Fiction", etc.

A large number of children's books, picture books and toy books for pre-school and junior schoolchildren is

published by the Malysh (Children's) Publishing House. The largest publishing house of literature for youth is the Molodaya Gvardia (Young Guards) Publishing House of the Central Committee of the Komsomol.

Specialised publishing houses of literature for children and youth have been set up in the Ukrainian, Azerbaijan, Georgian and other Soviet republics. The territorial and regional publishing houses, as well as the publishing houses of the Union and Autonomous republics are continuously increasing publication of children's books.



Lenin Prize winner, Samuel Marshak, a well-known children's writer, talks to children at the Children's Books House

Some of the best authors and most prominent teachers write books for children, and prominent artists illustrate these books.

Readers' conferences are often called in schools, extra-schools establishments, clubs and libraries for exchange of opinions on new books. A "Week of Children's Books" has been held annually since 1944 for the purpose of stimulating the schoolchildren's interest in reading and drawing the attention of the general public to questions of children's reading and work of school libraries.

In 1963 Samuel Marshak, well-known Soviet poet, was awarded the Lenin Prize for children's books.

A House of Children's Books was set up in Moscow in 1950. This house is the educational and methodological centre of the State Publishing House of Children's Literature. It has departments of theory and history of children's literature, its propaganda and studies of the interests of young readers, a library for children and an exhibition hall. Lectures and discussions are held, and the children meet with writers, teachers and librarians there. The house conducts extensive correspondence with the young readers, publishes critical and biographical essays and monographs about children's writers, lists of recommended books and pamphlets on various problems of children's literature.

Vocational-Technical Training

Vocational-technical schools intended for training skilled workers play an important part in the system of Soviet public education.

EXTENSION OF THE NETWORK OF SCHOOLS AND INCREASE IN PUPILS' CONTINGENTS

Until 1958 skilled workers for the various branches of industry and agriculture were trained in factory, trade, railway and mining schools, as well as in schools of mechanisation of agriculture and schools of building trades. These schools admitted persons with seven years of general schooling. There were technical schools with a course of training of from six months to two years for graduates of secondary general educational schools. The technical schools trained highly skilled workers for the most important production vocations and specialities connected with operation of complex machinery and equipment; they also trained junior technical personnel.

The youth were also given vocational training in the form of team and individual apprenticeship directly at industrial enterprises and on state and collective farms.

During the 22 years of their existence (1940-62) the vocational-technical schools trained millions of young skilled workers. They sent about 13 million people to industry, agriculture, construction, transport and communications. In 1962 the schools graduated 888,000 people, almost 150,000 more than the year before.

Further development of the vocational-technical training of youth and concrete measures for improving this training are envisaged in the 1958 Law.

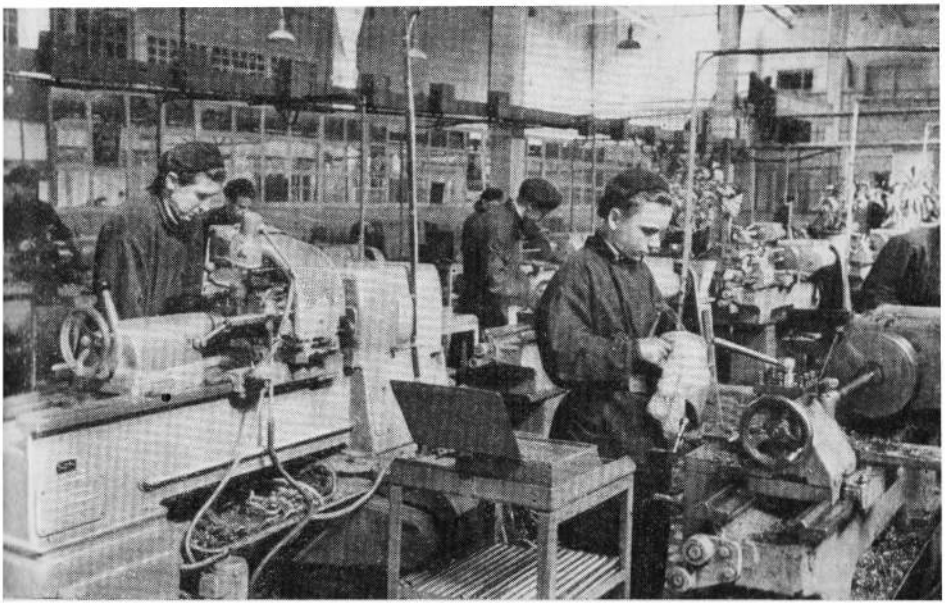
OBJECTIVES AND ORGANISATION OF VOCATIONAL-TECHNICAL TRAINING

The main aims of vocational-technical training of youth are regular and organised training of cultured and skilled workers for industry, agriculture, construction, transport and communications, and their ideological and political education.

The formerly existing vocational-training schools have therefore been reorganised into urban and rural schools with different courses of training: urban schools—from one to three years, rural schools—from one to two years.

The training in vocational-technical schools enables 15-16-year-old boys and girls after graduation from eight-year general educational schools to acquire vocations of their choice and to get down to independent work.

Urban vocational-technical schools specialise according to branches of production and train skilled workers for industry, construction, transport, and the communal, commercial and cultural services, for which reason there are schools for metal-workers, miners, metallurgists, power workers, chemists, builders, railway workers,



Vocational-technical school shop at the Likhachov Motor Works in Moscow

workers of the clothing industry, restaurant and kitchen workers, etc.

Rural vocational-technical schools train tractor drivers, mechanics of agricultural machinery, electricians for rural electric power plants, radio technicians, builders, smiths, etc. All pupils of these schools are paid pupils' wages. Orphans and children of large families are additionally given free clothes and food.

The regular vocational-technical schools have evening departments which enable the workers who have mastered the fundamentals of their vocations by team or individual training or at short-term courses to improve their skills without discontinuing their work in production.

Vocational-technical schools with a 12-year course of training intended for orphans have been in existence in

the U.S.S.R. since 1958. They admit seven-year-old children. All the training and maintenance expenses are defrayed by the state. The curricula of these schools contain subjects of the general educational, polytechnical, production-technological, and aesthetic cycles. In grades 1-8 the same general educational subjects are taught as in the regular eight-year schools. The general educational, special and other subjects in the upper grades are the same as in secondary technical and other special secondary schools. Unlike the general educational, boarding and other schools, these schools begin to teach a foreign language, domestic science, music and dancing in the first grade.

Young workers are also trained through individual or team apprenticeship directly at industrial enterprises.

In the Soviet Union vocational-technical training is based on the achievements of science and technology and their introduction into the national economy. The list of vocations is systematically reviewed, those which are connected with backward technics are eliminated and, contrariwise, training for new vocations is organised.

Today the vocational-technical schools in the U.S.S.R. train workers in several thousand vocations and specialities which may be conditionally divided into two groups. The first group includes a number of combined vocations of wide-range specialisation connected with mechanisation and automation of production and industrialisation of building. Among them are: adjusters of automatic lines and machine units, operators of electronic computers, of apparatus used in production of synthetic materials, of various automatic devices and installations.

The second group consists of mass occupations and specialities which will not lose their significance in the nearest future, but which will subsequently gradually decrease as a result of development of the vocations of the first group. This group includes turners, milling-

machine operators, fitters, masons, plasterers and many others.

All the subjects in the curricula of these schools fall into three cycles: vocational-technical, general educational and polytechnical, and physical education.

The vocational-technical cycle includes production training, special technology and other subjects directly connected with mastering the vocation. Training in production, to which 60-70 per cent of the school time is allotted, is the basis of vocational training. The vocational training begins in training workshops; production practice is conducted directly at industrial enterprises. In cases, where the course of training is 2-3 years, the practice at industrial enterprises takes, as a rule, at least 6 months and, where the course of training is one year, it takes 3-4 months. At the industrial enterprises the pupils are given practice, not only in the chosen vocation, but also in general technology of production which considerably extends their polytechnical knowledge and enables them to understand the whole complex of processes in the given branch of production.

Special attention is devoted to studying the latest machinery and up-to-date technology of production.

The general educational and polytechnical cycle includes mathematics, physics and chemistry, general technology of production, technical mechanics, electrical engineering, technical drawing, fundamentals of mechanisation and automation of production, fundamentals of organisation and economics of production and other general educational and general technical subjects depending on the character of the vocation.

The introduction of a number of general educational and general technical subjects into the curricula of these schools means inclusion of elements of engineering and technical training in the range of the skilled workers' knowledge.

At a lesson in agricultural mechanics school

The graduates from vocational-technical schools are guaranteed work in their speciality. The substantial general educational training they receive enables them to continue their general education in the upper grades of evening (shift) schools without discontinuing work and to enter higher schools.

The system of vocational-technical education employs a large number of experienced teachers, engineers, technicians and masters of production training. Close to 4,500 specialists with a higher or secondary technical education were appointed to these schools in 1962 alone. More than 8,000 teachers and other educational workers

were given additional training at special advanced courses. The best workers of the system of vocational-technical education are awarded honorary titles of Honoured Master or Honoured Teacher of Vocational-Technical Education.

Republican, territorial, regional, inter-regional and city offices of educational methods have been set up for the purpose of giving the teachers and masters of production training systematic help in methods. City, regional, territorial and republican Pedagogical Readings are held annually. The best papers are read at central Pedagogical Readings held in Moscow.

The forms and methods of educational work in vocational-training schools are varied and are aimed at extending and deepening the social and political knowledge of the pupils, developing their multifarious interests and inclinations, stimulating their activity and initiative, and promoting their cultured leisure. Komsomol organisations play a leading role in the educational work among the youth. Scores of thousands of pupils participate in the activities of various subject and technical circles where under the supervision of experienced engineers they produce models of complex machines, construct various contrivances which raise labour productivity, and manufacture visual aids for study-rooms and laboratories. The results of the pupils' work are demonstrated at annual exhibitions and at the Moscow Permanent All-Union Exhibition of Schoolchildren's Technical Endeavour. In recent years they were shown in Poland, Yugoslavia, Rumania, Hungary, Czechoslovakia, the World Exhibition in Brussels and the Soviet Exhibition in the U.S.A.

The pupils of vocational schools have at their disposal dozens of houses of culture with numerous amateur bands and folk-instrument orchestras, choirs, song and dance ensembles, amateur theatres, etc. Hundreds of thousands of pupils participate in the activities of these amateur talent collectives.

Various forms of physical education are widely employed in vocational schools; they include setting-up exercises in the morning and during special intervals in production, hikes and walks, physical training envisaged in the curriculum and voluntary athletics and sports.

The Trud (Labour) Sports Society whose membership numbers scores of thousands of boys and girls is well

known all over the country. Local, regional and All-Union Spartakiads of the pupils in winter and summer sports are held regularly. The pupils of vocational-technical schools systematically participate in the U.S.S.R. and international competitions; they have set quite a number of U.S.S.R. and world records.

ADVANCED TRAINING OF WORKERS AND EMPLOYEES

Advanced training of workers and employees in their specialities and their training in related vocations is a special form of vocational-technical training. This work extensively conducted in the Soviet Union continuously improves the cultural and technical standards of the masses of the working people.

The following figures show the number of workers and employees who have received advanced training at industrial enterprises and in various institutions and organisations in the last 10 years.

Years	Total number of workers and employees trained in new vocations and specialities and given advanced training (annual average in thousands)	Workers only
1951-1955	7,697	5,926
1959	8,826	7,347
1960	9,765	8,165
1961	10,217	8,314
1962	11,030	8,535

Advanced training and training in related vocations are conducted at special courses and individually in schools of foremost experience established at many

industrial enterprises. Various literature is published to help the workers and employees who take advanced training.

Advanced training and training in related vocations in agriculture is beginning to assume the character of a mass movement. Two years ago not more than 200 of the 749 workers of the Novorybinsk Virgin Land State Farm could operate a tractor or combine. Operators of these machines had to be temporarily hired for sowing and harvesting. The workers of the state farm decided to put an end to this state of affairs. A branch of the Danilovo School of Mechanisation was opened on the state farm in December 1960, and 70 of the workers enrolled. During the course of studies all of them were paid a certain allowance by the state. A total of 146 workers were trained in a period of 18 months. Evening courses of training in related vocations were conducted simultaneously. Every person attending the courses was taught to operate three machines—tractor, combine and automobile. The state farm now has enough technically trained people to do any work. More than 300 of them can operate two or three machines and can change from one to another if need be.

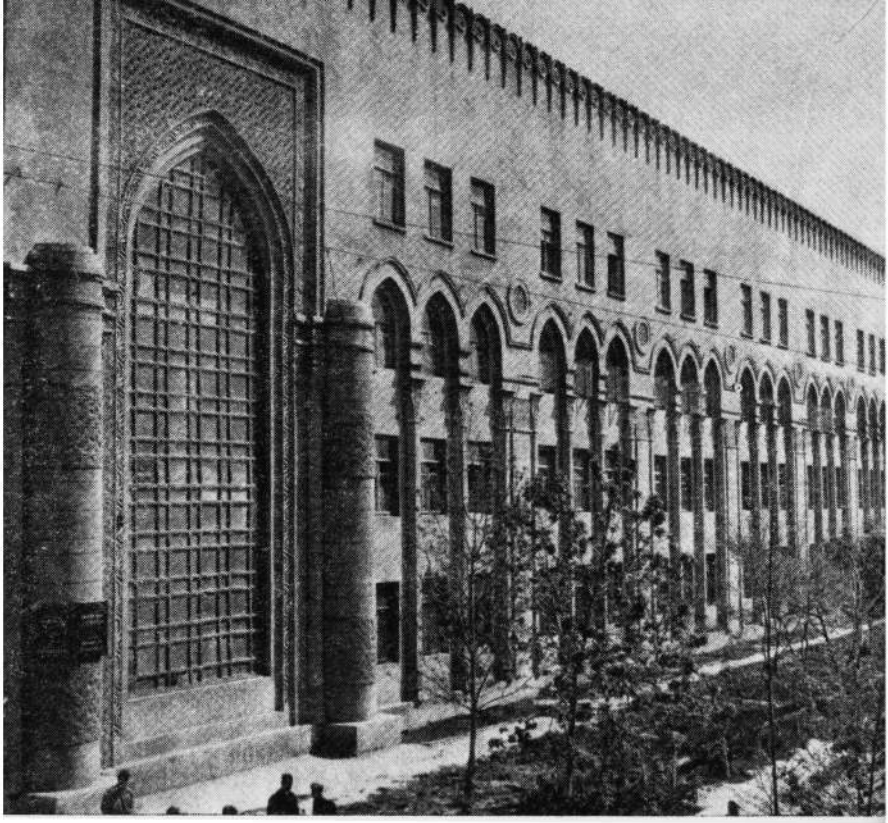
Continued technical progress in all branches of the national economy requires increasingly greater skills on the part of the great mass of workers. Development of vocational-technical training and general improvement of the workers' skills has therefore acquired today especial significance.

Special Secondary (Vocational) Training

In the U.S.S.R. there are more than 5 million specialists with a special secondary education. They play an increasingly more important role, with each passing year, in the development of industrial and agricultural production, culture, public education and health. This is why both the socialist state and the Communist Party display great concern about extending the network of special secondary schools, increasing the contingents of their pupils and improving the quality of training specialists with a secondary education.

SYSTEM OF SPECIAL SECONDARY SCHOOLS

In the Soviet Union junior specialists are trained in industrial, transport, agricultural and other secondary technical schools, secondary pedagogical schools and secondary schools of music, medicine, law, the arts, etc. All these schools offer the pupils a complete secondary education and theoretical and practical training in the chosen specialities, while the secondary technical and agricultural schools give them the necessary skills and



Tashkent secondary technical school for builders

definite ratings in the chosen specialities. The special secondary schools admit persons with eight years' schooling and for certain vocations with a complete secondary education.

The system of special secondary education in the U.S.S.R. comprises the following principal types of schools:

1. Regular daytime schools in which the students study general educational and special subjects and receive their production training at industrial enterprises, in var-

ious institutions, on state and collective farms, etc., 80 per cent of the students are paid state allowances and out-of-town students are given free hostel accommodations.

2. Evening schools attended by students who keep working and who get their practical training mainly at their place of work.

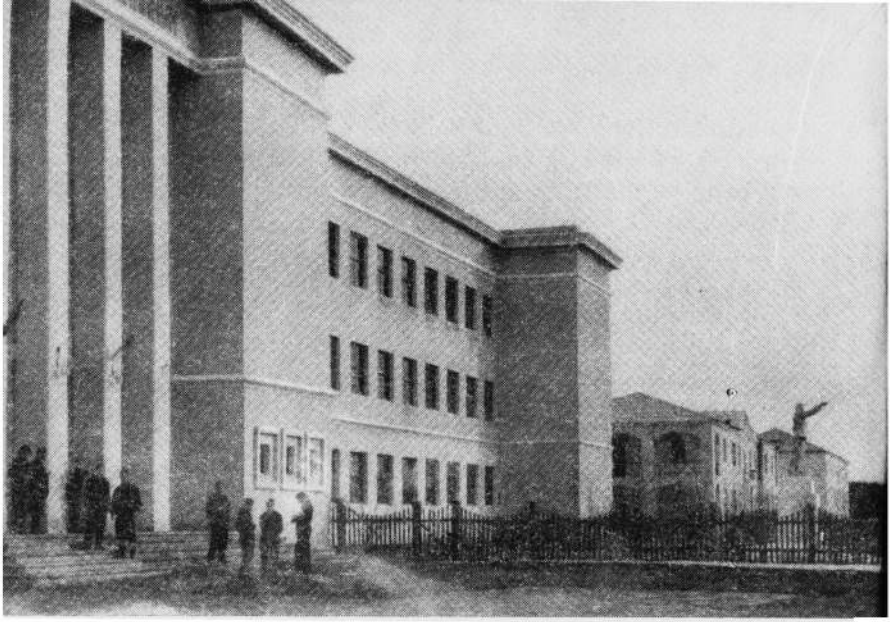
3. Correspondence schools whose students, also without discontinuing work, independently fill the assignments sent to them by mail and twice a year render accounts of their studies.

Large industrial enterprises have branches and evening sections of regular schools for those who study without discontinuing work, and consultation centres for correspondence students.

During the 1914-15 school year there were only 450 special secondary schools with an enrolment of only 54,300 students.

The following table offers a good idea of the development of special secondary vocational training and its present state.

	School year					
	1914-15	1925-26	1940-41	1950-51	1960-61	1962-63
	(Within present borders)					
Number of schools .	450	983	3,773	3,424	3,328	3,521
Number of students (in thousands) . .	54.3	181.3	974.8	1,297.6	2,059.5	2,668
Including those who continue working .	—	—	187.5	233.1	968.7	1,358



Agricultural secondary school named after Lenin and Krupskaya in the Siberian village of Shushenskoye

Thus, during the 1962-63 school year the number of special secondary schools exceeded that of the 1914-15 school year almost 8-fold and the number of students—nearly 50-fold. Despite the slight decrease in the number of schools in 1962 (compared with 1940 and 1950) the number of students steadily increased and today exceeds the pre-war number more than 2.7-fold.

Since 1954 the system of special secondary education has included schools with courses of training of 1.5-2.5 years and special groups with reduced curricula in existing educational establishments. They admit boys and girls graduated from secondary general educational schools. The subjects taught are mainly those which contribute to the vocational training of the students.

An important part in the system of secondary vocational education is played by evening and correspondence

In a laboratory of the agronomy department of a secondary technical school

schools. During the 1962-63 school year the country numbered 213 evening and 55 correspondence secondary technical schools and more than 1,300 evening and correspondence departments at regular day schools with an enrolment of 1.4 million students. Since 1940 the number of evening and correspondence secondary technical schools has increased 8-fold and the number of students who continue working—more than 5-fold.

In 1963 the secondary technical and special schools employed some 120,000 teachers and engineers.

Special secondary education has greatly developed in the Union republics where there was hardly any before the October Revolution. There was not one secondary vocational school on the vast territory now occupied by the Kirghiz, Tajik and Turkmen republics. In prerevolutionary Azerbaijan there were only 3 secondary

vocational schools, despite its great industrial importance.

The following table offers an idea of the development of the network of vocational schools (including the evening and correspondence schools).

	School year	
	1914-15 (Within present borders)	1962-63
U.S.S.R.	*450*	*3,521*
R.S.F.S.R.	297	2,078
Ukrainian S.S.R. .	88	644
Byelorussian S.S.R.	15	105
Uzbek S.S.R. . .	1	85
Kazakh S.S.R. . .	7	144
Georgian S.S.R. .	5	86
Azerbaijan S.S.R.	3	69
Lithuanian S.S.R.	13	75
Moldavian S.S.R. .	5	31
Latvian S.S.R. . .	11	54
Kirghiz S.S.R. . .	—	29
Tajik S.S.R. . . .	—	24
Armenian S.S.R. .	1	42
Turkmen S.S.R. .	—	24
Estonian S.S.R. .	4	34

The rate of increase in the contingents of students of secondary special schools can be traced by the following table.

	School year					Number of students per 10,000 population	
	1914-15	1940-41	1950-51	1960-61	1962-63		
	(Within present borders)					1940	1963
	(In thousands)						
U.S.S.R.	*54.3*	*974.8*	*1,297.6*	*2,059.5*	*2,667.7*	*51*	*119*
Including:							
R.S.F.S.R.	35.4	594.0	810.0	1,260.3	1,641.2	58	132
Ukrainian S. S. R.	12.5	196.2	227.2	398.2	501.8	48	114
Byelorussian S. S. R.	1.4	35.0	41.8	62.6	83.0	40	99
Uzbek S. S. R.	0.1	25.1	40.4	52.6	73.3	40	77
Kazakh S. S. R.	0.3	30.3	41.9	86.7	112.5	49	103
Georgian S. S. R.	0.5	26.1	23.8	26.3	30.1	74	70
Azerbaijan S. S. R.	0.5	17.4	20.3	27.0	36.8	54	86
Lithuanian S. S. R.	1.5	6.4	11.5	32.3	43.6	34	148
Moldavian S. S. R.	0.5	4.1	12.8	17.2	22.0	17	70
Latvian S. S. R.	1.3	9.6	17.7	24.7	30.5	50	141
Kirghiz S. S. R.	—	6.0	10.6	17.2	21.5	41	92
Tajik S. S. R.	—	5.9	10.8	11.9	14.9	40	55
Armenian S. S. R.	0.1	8.9	10.3	14.8	20.1	70	100
Turkmen S. S. R.	—	7.7	7.6	12.3	15.1	61	88
Estonian S. S. R.	0.2	2.1	10.4	15.4	21.3	20	175

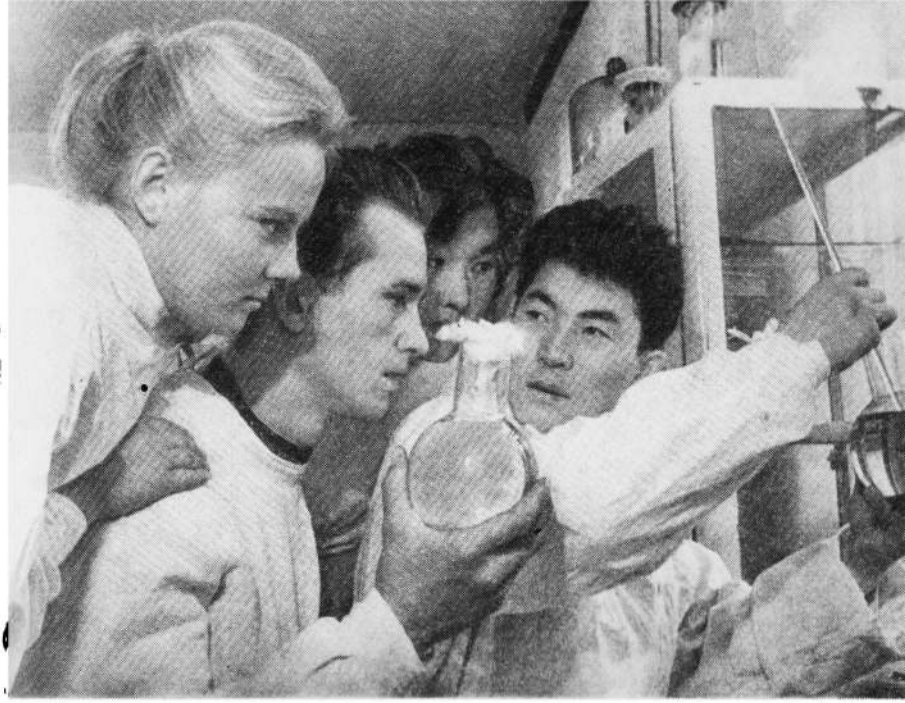
The Soviet special secondary schools are attended by a large number of girls whose percentage in the students' contingents has steadily increased since the war. For example, during the 1962-63 school year the industrial and building secondary technical schools had 34 per cent girl students, the secondary agricultural technical schools—38 per cent, the secondary schools of education, the arts and cinematography—79 per cent, and the secondary schools of public health and physical culture —86 per cent.

The special secondary schools train personnel for all branches of the national economy and culture. This is evident from the following table pertaining to the 1962-63 school year.

Schools	Number of students enrolled
Total number of students enrolled	*905,600*
Including:	
Industrial and building . .	360,000
Transport and communications	73,000
Agricultural	146,300
Economics and law	122,000
Public health, physical culture and sports	91,300
Pedagogical	92,900
Arts and cinematography .	20,100

The Soviet secondary technical and special schools offer training in more than 500 specialities.

Very characteristic changes have occurred in recent years in the distribution of students according to specialities. The percentage of specialities connected with



These students were sent to the Abakan agricultural secondary school by the collective farms, Khakassia

industry, building, agriculture, transport and communications has considerably increased. This is due to the fact that during the post-war years the training of technicians for the various branches of the national economy, particularly the heavy and light industries, was increased, whereas the training of teachers, medical workers and certain other specialists was increased in the higher schools and correspondingly reduced in the special secondary schools.

The following table showing the number of young specialists graduated in 22 years from special secondary schools (according to branch groups) offers an idea of these changes.

Groups of schools	1940	1950	1962
	(In thousands)		
Industrial and building	21.7	85.4	163.9
Transport and communications	8.3	18.9	34.5
Agricultural	21.5	48.7	74.8
Economics and law	7.2	24.9	60.2
Pedagogical	85.7	76.6	51.9
Public health, physical culture and sports	90.4	54.2	58.5
Arts and cinematography	2.0	5.0	9.2
Total	236.8	313.7	453.0
Including those studying without discontinuing work	31.5	34.7	162.0

It will be observed, for comparison, that all the special secondary schools of pre-revolutionary Russia graduated a total of only 7,400 people in 1914.

During the 1918-62 period the Soviet special secondary schools trained 8,627,000 junior specialists.

TRAINING AND EDUCATION

The interests of modern production based on the latest achievements of science and engineering require of the junior technical personnel a high level of theoretical training and good practical knowledge. In virtue of this the 1958 Law emphasises the necessity of continually improving the system of special secondary education, combining the training with socially useful labour and bringing the training as close to production as possible.

The Soviet special secondary schools admit persons with eight years' schooling (for some specialities—with a secondary education) up to 30 years of age. The admissions are based on competitive examinations in Russian or the native language and mathematics (for certain specialities also in history) covering the course of the eight-year school. Persons who have worked for a certain period in the given speciality are granted certain entrance privileges. Evening and correspondence departments enrol students on the same basis except the age limit.

Students attending special secondary schools without discontinuing work enjoy a number of privileges, including additional annual leave with pay (from 10 to 40 days, depending on the year of study) for laboratory work, tests and examinations, additional leave with pay (30 days) for graduation examinations, and additional leave with pay (2 months) for preparing and presenting their diploma work, a shorter work week (by one day) for 10 school months preceding the beginning of the diploma work or state examinations with 50 per cent of the day's wages paid. For the period of entrance, annual and final examinations students may, upon request, be granted additional (over and above the regular) leave without pay.

The courses of study in secondary special schools vary between 3 and 4 years, depending on the particular speciality (in evening or correspondence secondary technical and secondary vocational schools the courses of study are 1-1.5 years longer).

The school year is divided into two semesters: the first—from September 1 to January 23, and the second—from February 7 to June 30. The intervals between the semesters are vacations. In schools where the various forms of study are connected with different seasons the school year and vacations begin on other dates. Examin-

ations are held over a period of 2-3 weeks at the end of the semesters and are preceded by tests and quizzes.

The curricula and programmes of all special secondary schools—despite the differences in the fields of training—have one common aim, namely, to enable the students to complete their secondary education and to give them a broad vocational outlook and sound special knowledge and skills.

As a rule, the curricula comprise three cycles—general educational, general technical and special.

For example, the general educational cycle to which a total of about 1,500 hours is allotted includes a number of subjects contained in the curriculum of the secondary school, namely, history of the U.S.S.R., Russian and literature, mathematics, physics, chemistry, a foreign language and physical education. The same number of hours (about 1,500) is allotted to the general technical cycle. The common subjects for kindred specialities in this cycle are: mechanical drawing, technical mechanics, electronics, mechanical engineering and metal processing. The lists of subjects included in the special cycle differ from each other considerably, depending on the type of training.

The curricula of most industrial, building, transport and agricultural specialities provide a special period during which the students work independently at industrial enterprises or in production shops or on farms of the schools. The curricula of most specialities allot about 50 per cent of the school time (instead of the 20-30 per cent prior to the 1958 Law) to production training and improvement of vocational skills.

The training process in special secondary schools is conducted in the following principal forms: (1) lessons, (2) lectures, (3) seminars, laboratory and practical work, (4) annual papers, (5) training and production practice,

(6) consultations, and (7) diploma work or state examinations.

Two principal forms of training combining education with socially useful labour have become firmly established in the practice of secondary technical and special schools: daytime training combined with work in production and training without discontinuing work.

The first of these forms combines daytime training with work in production; concretely this form of training depends on the specialisation of the school, the speciality chosen by the student and the year of study. During the initial period, in addition to studying theoretical and general educational disciplines, the students acquire practical skills in the chosen vocation; subsequently they begin to work independently at a regular working place and complete their education while working.

In the fields of public health, education and the arts theoretical studies are conducted all through the period of training and are accompanied by long periods of practical work and participation in socially useful labour in corresponding institutions and organisations (schools, kindergartens, polyclinics and hospitals, institutions of arts and culture). The socially useful activities of the students consist in performing the functions of the junior medical personnel, participation in concerts, supervision of amateur talent collectives in schools, Young Pioneer camps, etc.

The second form consists in correspondence and evening training, while the students are engaged in their regular occupations, with a certain amount of studies under personal supervision of instructors during the laboratory and examination periods, and, by request of the students, in between the semesters.

The training in special secondary correspondence and evening schools is based essentially on the same principles as in corresponding daytime schools. The principal

form of work is independent work of the students who receive educational and methodological literature, as well as written and oral consultations from the schools. The students do home assignments which are checked by teachers. Once a year correspondence schools hold laboratory and examination sessions during which the students do laboratory work and take tests and examinations. During the same period they attend lectures and get consultations on their further work.

All special secondary schools devote considerable attention to extra-class training and education, for which purpose they arrange evening recreation parties, lectures and excursions, and organise various circles, including sports circles. An important part in these activities is played, as in the general educational school, by Komsomol organisations.

The students who have passed the state examinations or have successfully defended their diploma work receive a special secondary school diploma (indicating the speciality and vocational rating) and are sent to work. All graduates of secondary technical and special schools have every opportunity to receive a higher education.

Higher Education

The higher school is the final unit in the system of public education. By training and educating highly skilled specialists the higher school plays a most important part in solving the problems of communist construction in the U.S.S.R.

SYSTEM OF HIGHER EDUCATION

The U.S.S.R. has the following forms of higher education: daytime—the students only study, evening and correspondence—the students study and work. There are daytime higher schools with evening and correspondence branches, faculties and departments, and independent evening and correspondence higher schools.

All higher schools can be divided into three basic groups, namely, universities, polytechnical institutes and special institutes. Some large special institutes are polytechnical in their field. Certain Soviet higher schools are traditionally called academies and schools, which is in no way connected with any peculiarities of their curricula. The higher schools of music are known as conservatoires.

Factory higher technical schools at large industrial enterprises are a new form of schools of higher learning. Their students receive a higher education while working at these enterprises.

Schools of higher learning train highly skilled specialists who master the latest achievements of Soviet and foreign science and engineering and are capable, not only of fully utilising them, but also of advancing them; they also conduct research which contributes to the solution of the problems of communist construction, train scientists and teachers, offer advanced training to specialists working in various branches of the national economy, culture and education, and disseminate scientific and political knowledge among the working people.

Higher education has considerably developed in Soviet time. This is attested by the following table:

	Academic year					
	1914-15 (within present borders)	1925-26	1940-41	1950-51	1960-61	1962-63
Number of schools	105	145	817	880	739	738
Number of students (in thousands)	127.4	167.0	811.7	1,247.4	2,395.5	2,944
Including students who continue working (in thousands)	—	—	254.0	429.0	1,240.0	1,657

The following table offers an idea of the development of higher education in the U.S.S.R. and the Union republics:

Number of Higher Schools in the U.S.S.R. and the Union Republics (Including Evening and Correspondence Schools)

	Academic year					
	1914-15 (within present borders)		1940-41		1962-63	
	Total	Including universities	Total	Including universities	Total	Including universities
U. S. S. R.	*105*	*12*	*817*	*29*	*738*	*41*
Including:						
R. S. F. S. R.	72	6	481	12	426	20
Ukrainian S. S. R.	27	5	173	7	133	7
Byelorussian S. S. R.	—	—	25	1	25	1
Uzbek S. S. R.	—	—	30	2	29	2
Kazakh S. S. R.	—	—	20	1	32	1
Georgian S. S. R.	1	—	21	1	18	1
Azerbaijan S. S. R.	-		16	1	12	1
Lithuanian S. S. R.			7	1	11	1
Moldavian S. S. R.	—	—	6	—	6	1
Latvian S. S. R.	1	—	7	1	10	1
Kirghiz S. S. R.	—	—	6	—	8	1
Tajik S. S. R.	—	—	6	—	7	1
Armenian S. S. R.	—	—	9	1	11	1
Turkmen S. S. R.	—	—	5	—	4	1
Estonian S. S. R.	4	1	5	1	6	1

The foregoing data show that the number of higher schools in the 1962-63 academic year was 7 times that of the 1914-15 academic year.

The last decade has brought a lot that is new into the activities of the country's higher schools. A good deal has been done to regulate the network of higher schools and improve their distribution over the country's economic areas. Some higher schools were merged and

some were closed down. This explains the decrease in the number of higher schools compared with the 1940-41 academic year. Among the higher schools that were closed down there were 106 two-year teachers' institutes which trained teachers for grades 5-7 of general educational schools. At the same time new schools of higher learning were established in different parts of the country. For example, the intensive development of the national economy in the eastern areas of the country necessitated an expansion of the formerly existing higher schools and establishment of a number of new ones. Before 1917 there were only 4 higher schools in those parts, whereas in 1961 their number reached 204.

Today there are schools of higher learning in all Union and Autonomous republics; they are located in 247 cities (before the Revolution they were situated only in 21 cities, mainly in the European part of the country). In the future, owing to the planned increase in the number of higher schools, and their daytime, evening and correspondence branches, as well as the establishment of agricultural institutes on large state and collective farms, schools of higher learning will be located in a still greater number of cities and other communities.

The increase in the number of students is a vivid index of the development of higher education.

The foregoing table shows that in the 1962-63 academic year there were 23 times as many students as in the 1914-15 academic year and 3.5 times as many as in the 1940-41 academic year.

Worthy of attention is the considerable expansion of the network of universities which play an honourable part in the system of Soviet higher education. There were 12 universities with 41,000 students in Russia in the 1914-15 academic year, whereas in the 1962-63 academic year the U.S.S.R. had 41 universities with a contingent of 216,800 students. Compared with 1940 the

Number of Higher School Students (in thousands) in the U. S. S. R. and the Union Republics (Including Working Students)

	Academic year					Number of students per 10,000 population		
	1914-15	1940-41	1950-51	1960-61	1962-63	1914	1940	1963
U. S. S. R.	*127.4*	*811.7*	*1,247.4*	*2,395.5*	*2,943.7*	*8*	*41*	*132*
Including:								
R. S. F. S. R.	86.5	478.1	796.7	1,496.1	1,827.0	10	26	148
Ukrainian S. S. R.	35.2	196.8	201.6	417.7	517.6	8	48	117
Byelorussian S. S. R.	—	21.5	31.6	59.3	75.7	—	24	90
Uzbek S. S. R.	—	19.1	42.2	101.3	126.5	—	29	133
Kazakh S. S. R.	—	10.4	31.2	77.1	98.0	—	17	89
Georgian S. S. R.	0.3	28.5	35.0	56.3	65.9	1	81	153
Azerbaijan S. S. R.	—	14.6	28.6	36.0	45.1	—	45	107
Lithuanian S. S. R.	—	6.0	11.4	26.7	33.3	—	21	113
Moldavian S. S. R.	—	2.5	8.7	19.2	24.8	—	10	78
Latvian S. S. R.	2.1	9.9	14.2	21.6	27.4	11	52	123
Kirghiz S. S. R.	—	3.1	8.6	17.4	23.1	—	22	95
Tajik S. S. R.	—	2.3	7.1	20.0	22.0	—	15	100
Armenian S. S. R.	—	11.1	15.1	20.2	25.9	—	87	130
Turkmen S. S. R.	—	3.0	6.6	13.1	14.8	—	24	88
Estonian S. S. R.	3.3	4.8	8.8	13.5	16.6	27	46	138

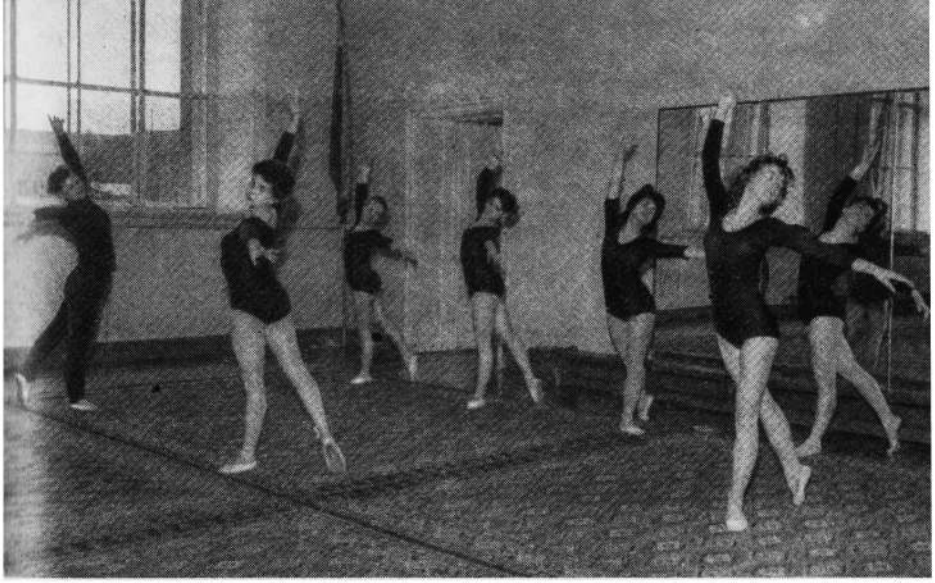
Main building of the Lomonosov State University, Moscow

number of university students increased more than threefold.

Soviet universities train specialists of a broad outlook and extensive scientific knowledge in more than 60 different fields, including physics, chemistry, mathematics, mechanics, biology, geography, geology, philology, history, psychology, economics, etc. In addition to training scientists, the universities also train teachers for all types of secondary schools.

The Soviet state universities are situated in different parts of the country; there are universities in all Union republics.

The largest Soviet school of higher learning is the Lomonosov State University founded in Moscow in 1755. During the 1962-63 academic year its 13 faculties numbered 24,000 students of 62 nationalities of the U.S.S.R. and 40 foreign nationalities. The university's 223 depart-

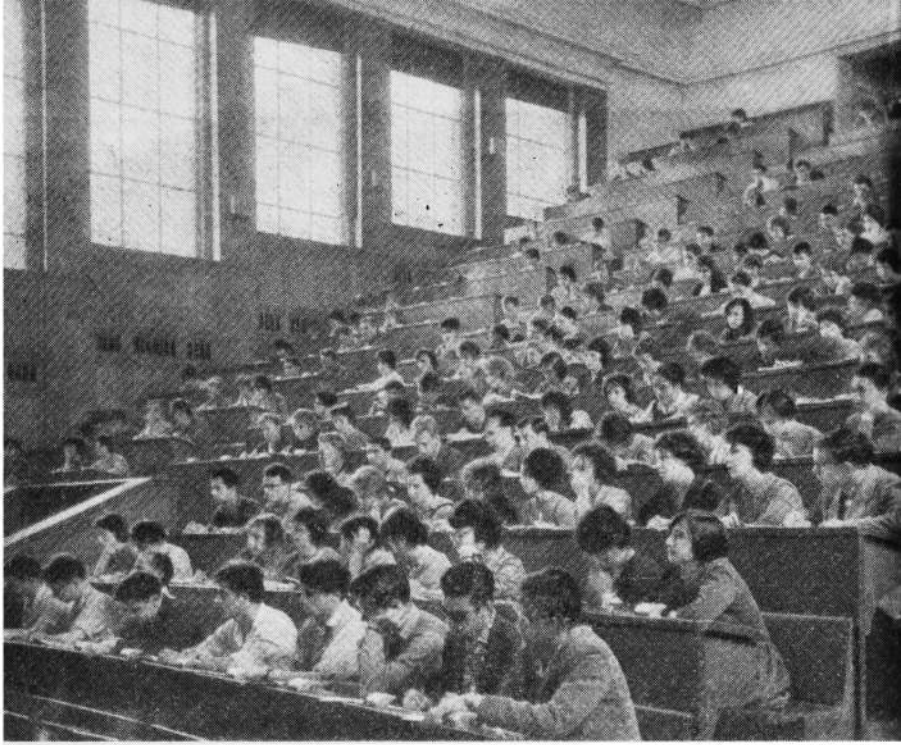


Calisthenics section

ments and 250 laboratories employ some 3,700 professors, instructors and scientific workers, including 78 academicians and corresponding members of the U.S.S.R. Academy of Sciences. New buildings were erected for Moscow State University on Lenin Hills in 1953. These buildings house 168 lecture halls and more than 1,700 laboratories and have close to 6,000 rooms for undergraduate and post graduate students and apartments for professors.

The 12 faculties of the Zhdanov State University in Leningrad number some 13,700 students; the Shevchenko State University in Kiev has 10,500 students, the Lenin State University in Tashkent—close to 6,000, the Kirov State University in Baku—about 8,000, etc.

The rapid development of industry, building, transport and communications characteristic of the Soviet national economy has determined the significance



Chemists to be

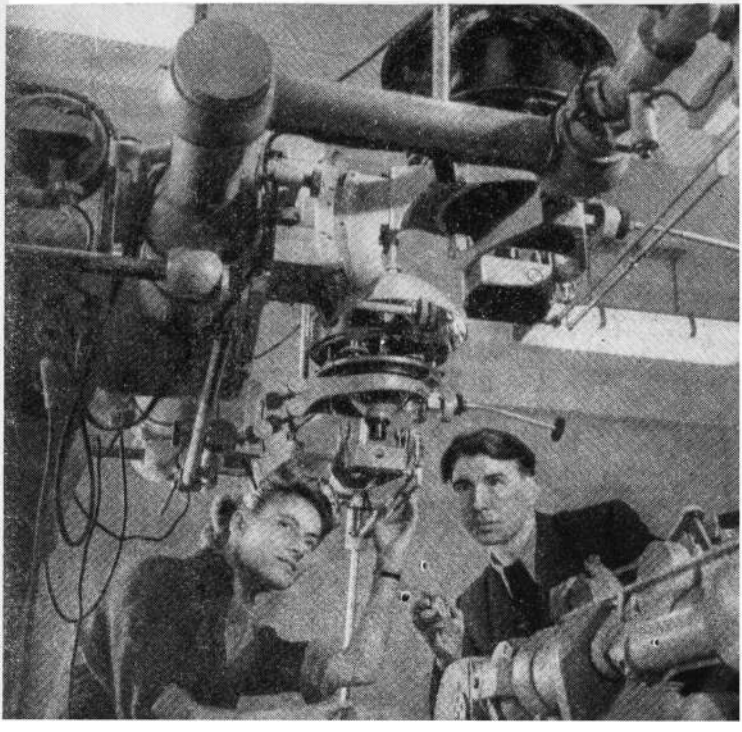
and place of the technical schools in the system of higher education. The network of these schools and the character of fields and specialities in which they offer training reflect the changes that have taken place in the country's economy in Soviet time. Since the 1914-15 academic year the number of higher technical schools has increased from 18 to 206 (169 higher schools of industry and 37 of transport and communications), the student contingent increasing from 24,900 to about 1,200,000 and continuing to increase. The higher technical schools offer training in more than 200 engineering specialities. The first four factory higher technical

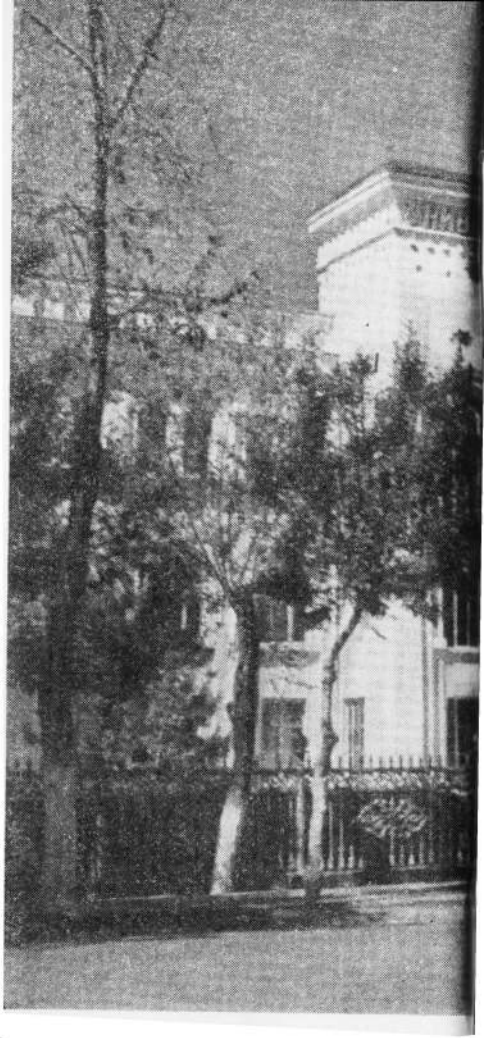
schools organised at some of the largest industrial enterprises of Moscow, Leningrad, Rostov and Dnieprodzerzhinsk began functioning in 1960.

An important part among the Soviet higher technical schools is played by polytechnical institutes—multifaculty technical schools training engineers in most diverse specialities. For example, the All-Union Polytechnical Institute (Moscow) offers training in 57 engineering specialities, the Urals Polytech—in 36, the Tomsk Polytech—in 39, the Georgian Polytech—in 37, etc. In 1963 there were 40 such institutes. Many of them have large evening and correspondence branches situated in other cities.

Agronomists, zootechnicians, agricultural

Photogrammetry laboratory of the Geography Department

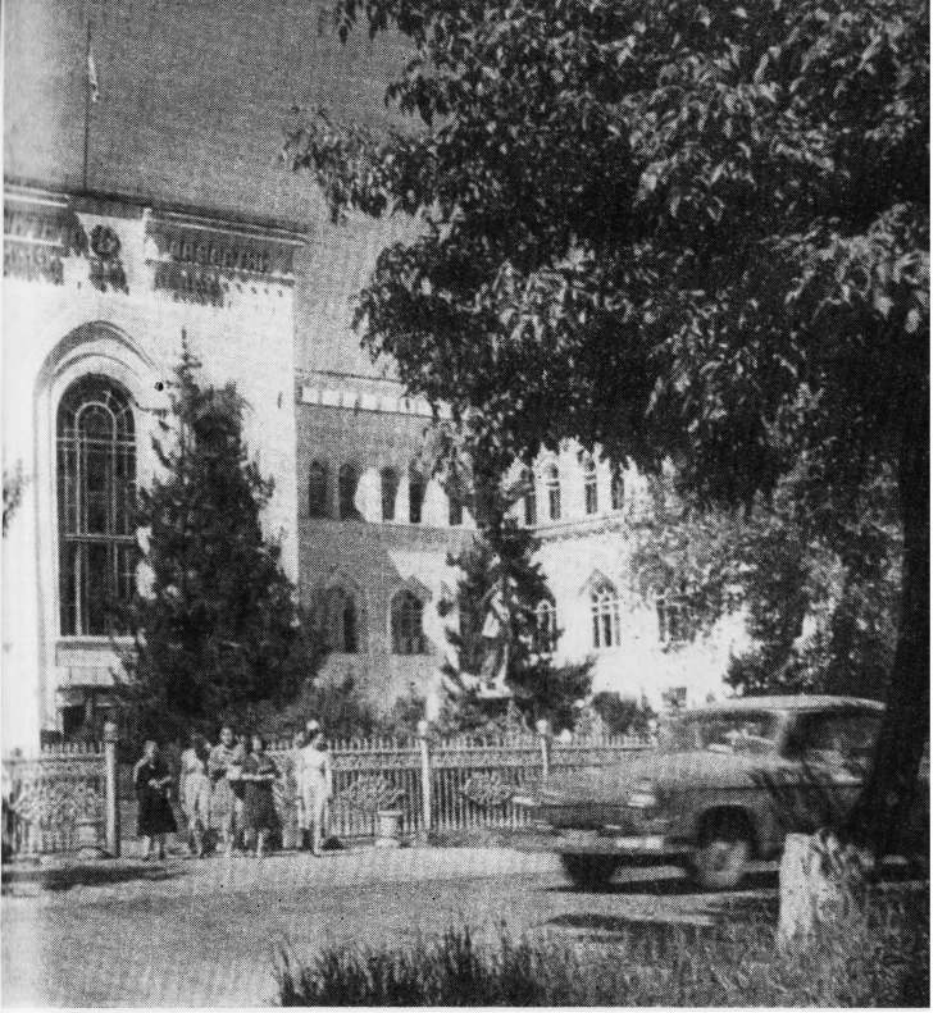




Lenin State University in Dushanbe, Tajikistan

engineers and other agricultural specialists are trained in 96 higher schools numbering 273,700 students, whereas in 1914 there were only 14 such schools with a contingent of 4,600 students.

Economists are trained in 15 specialised institutes, a number of industrial and agricultural institutes and some



of the universities. A total of 277,300 students were being trained in economics in the 1962-63 academic year.

Pedagogical institutes constitute one of the most numerous groups of Soviet schools of higher learning. In 1963 there were 194 general pedagogical institutes, 10

pedagogical institutes of foreign languages and a number of other higher schools of education with 624,600 students. In pre-revolutionary Russia there were only 5 state higher pedagogical schools and several privately operated higher pedagogical institutions for women.

An analogous picture is observed in medical education. Today the U.S.S.R. numbers 82 medical institutes and 16 higher schools of physical culture and sports; formerly there were no schools of physical culture and sports at all. These schools are attended by a total of 206,300 students. In 1914 Russia had only 6 higher medical schools and 7 medical faculties in universities with a contingent of 5,000 students.

Artistic education has attained considerable development in the U.S.S.R. The country has 22 conservatoires, 9 institutes and academies of fine arts, institutes of cinematography and architecture, 12 theatrical institutes, an institute of literature and a number of institutes and schools of applied and decorative arts. Compared with the pre-revolutionary time the number of higher art schools has increased sevenfold. In the 1962-63 academic year the higher art schools had 27,000 students.

Students receiving a higher education while working were trained during the 1962-63 academic year in 11 evening and 19 correspondence institutes, as well as over 1,000 evening and correspondence departments of regular higher schools. Central correspondence institutes with a large number of branches and educational consultation centres in other towns have been established and are successfully operating. For example, there are more than 20,000 students in the All-Union Correspondence Institute of Law which has 9 branches, and some 32,000 students in the All-Union Correspondence Polytechnical Institute and its two branches in the east of the country. Evening and correspondence training is offered in most of the specialities taught in the regular

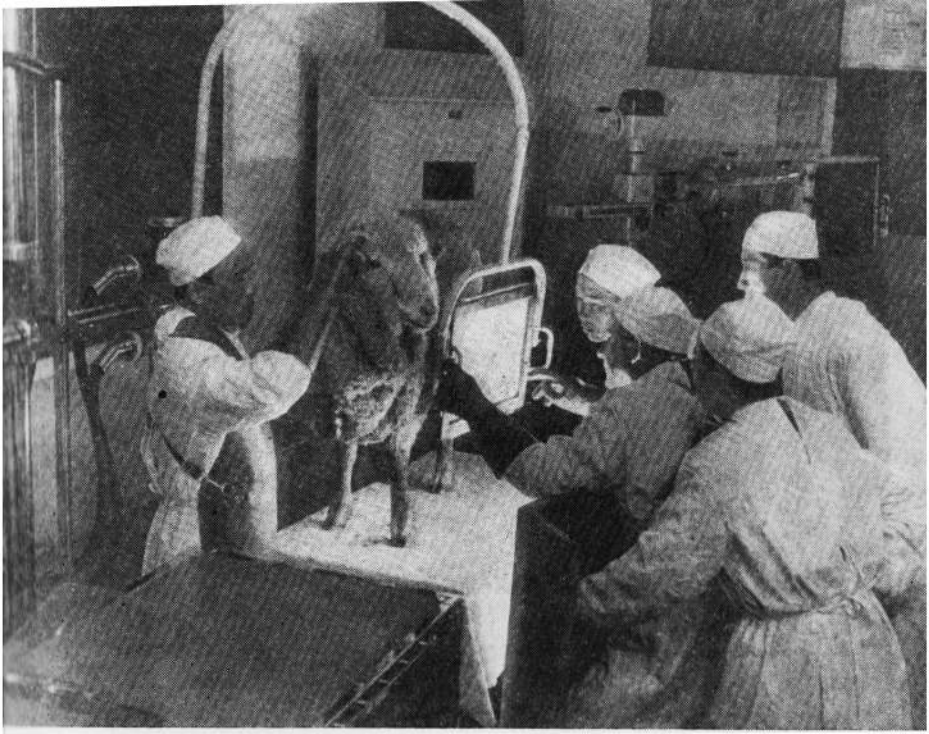
Fine arts studio at the Tartu State University

higher schools with the exception of medicine and the arts.

During the 1962-63 academic year more than half the total number of students of the country's schools of higher learning were students of evening and correspondence higher schools and faculties. Of the 727,500 students admitted to the country's higher schools in 1962, 415,400, or 57 per cent, continued working while attending school.

Amazing changes in the field of higher education have taken place in the former backward outlying districts of tsarist Russia. The foregoing table shows that there was not a single school of higher learning on the territory of 10 Union republics before the October Revolution. In 1962 these republics had 139 higher schools with 434,000 students. There was an average of 118 higher

Parasitology laboratory



Practical studies in roentgenoscopy at the Alma-Ata Veterinary Institute, Kazakhstan

school students per 10,000 population, not to count the large number of young people receiving an education outside their republics—in Moscow, Leningrad, Kiev, Kharkov, Saratov, Novosibirsk, Tomsk and other cities.

The number of higher schools and the students' contingents have also considerably increased in other parts of the country, particularly the Baltic republics which joined the Soviet Union in 1940. In the last 20 years the number of higher schools has increased 50 per cent and the number of students—3.3-fold. In 1962 Latvia, Lithuania and Estonia had 28 schools of higher learning with 70,000 students; there were 107 students per 10,000

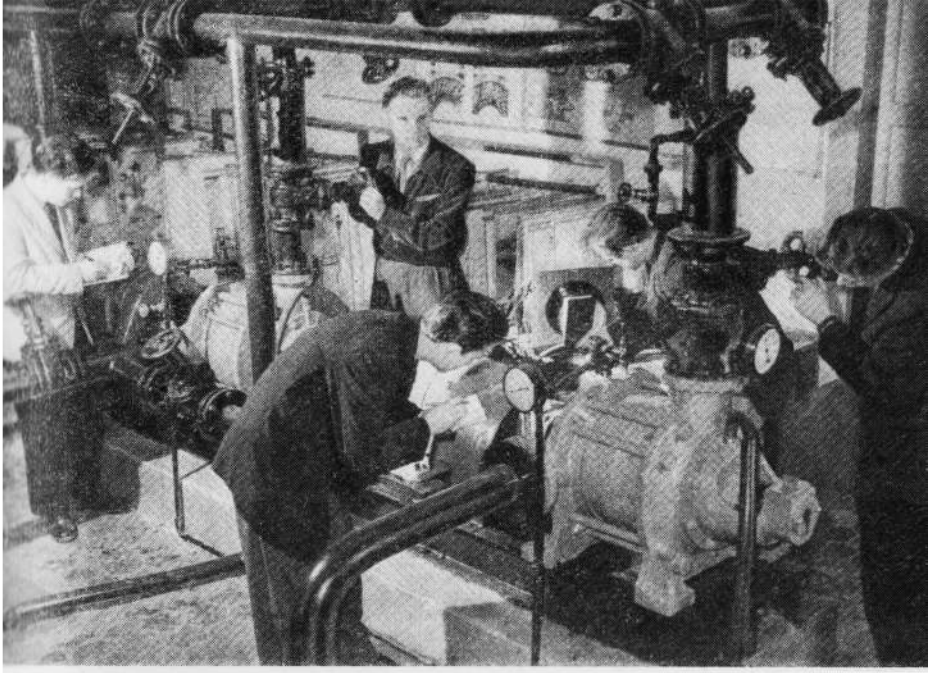
Letts, 124 students per 10,000 Estonians and 107 students per 10,000 Lithuanians. These figures do not include the students attending higher school outside their republics.

The number of higher school students of non-Russian nationality is steadily increasing. In the last 35 years the number of Tajik students has increased 81-fold, Kirghiz students—76-fold and Turkmen students—69-fold, while the number of Russian, Ukrainian and Byelorussian students has grown 10-fold. Such formerly backward peoples inhabiting Russia as the Chukchi, Eskimos, Koryaks, Nentsy, etc., which did not even have a written language before, have now gained free access to schools of higher learning. The U.S.S.R. has established an Institute of Northern Peoples (now the Faculty of Northern Peoples of the Herzen Pedagogical Institute in Leningrad) and a number of departments of higher schools which train personnel for the 22 nationalities of the Soviet North.

The Soviet Union has thrown the doors of its higher schools wide open to foreign students and has set up favourable conditions for their life and studies.

A new school of higher learning—Friendship University—named after Patrice Lumumba, the national hero of the Congo, was opened in Moscow in the autumn of 1960. This institution offers a higher education in various fields to young people of Africa, Asia and Latin America, as well as those of the Soviet Union. During the 1962-63 academic year this university trained more than 2,000 boys and girls from 82 countries.

Some 2,000 foreign students from 73 countries and representing 150 nationalities are studying at Moscow State University. In the last 12 years the number of foreign students at M.S.U. has increased 10-fold. During the same period close to 1,400 foreign citizens have been graduated from the university and some 350 persons went home with the degree of Master of Science after



Hydraulics and hydraulic apparatus laboratory at the Mining Institute in Krivoi Rog, the Ukraine

successfully defending their theses. The various departments of M.S.U. turned out 72 young foreign scientists during the 1961-62 academic year alone.

The striving to get a higher education in Soviet schools of higher learning is particularly great among the young people of Africa, Asia and Latin America.

The foreign students who come to the U.S.S.R. without sufficient knowledge of Russian or with a weak general educational background are enrolled in a one-year preparatory course of training. At the end of the year they take examinations in Russian, mathematics, physics, chemistry, biology and geography and win admission to the country's schools of higher learning.

Reading-room at the Patrice Lumumba Friendship University

Cuban folk dance performed by an international ensemble of the Engineering Department

The teaching staff and public organisations of the higher schools strive to acquaint the foreign students as intimately as possible with Soviet life. In addition to lectures and talks on social, political, philosophical and other subjects delivered to the foreign students, the latter are taken to different Soviet cities, historical sites, museums and picture galleries, industrial enterprises, state and collective farms, etc.

The foreign students take part in the social life of the students' bodies and in the scientific work of the higher schools, their laboratories and experimental institutions.

The Soviet schools of higher learning have no entrance restrictions for women. What is more, in some of

the country's schools of higher learning there are more women than men. In the 1962-63 academic year there were 54 per cent women in medical institutes and 62 per cent in pedagogical institutes. There was a high percentage of women also in other higher schools, for example, in technical schools—28 per cent and in agricultural schools—25 per cent.

Considerable changes have also taken place in the training of specialists in the various groups of higher schools. This is attested by the following table:

Groups of schools	1940	1950	1962
	(Number of specialists in thousands)		
Industrial and civil engineering	24.2	30.0	99.7
Transport and communications	5.9	6.1	15.9
Agricultural	10.3	12.7	30.8
Economics and law	5.7	11.4	24.1
Education	61.6	94.1	113.2
Public health and physical culture and sports	17.4	20.0	30.3
Arts and cinematography	1.0	2.6	2.6
Total	126.1	176.9	316.6
Including students who continue working	28.3	31.0	121.5

Thus in 1962 the total number of graduates was more than 2.8 times that of 1940, while the number of industrial, civil, transport and communications engineers graduated in 1962 was 3.7 times that of 1940. In Soviet time (1918-62) 5,426,000 people have been given a higher education.

The achievements of Soviet scientists, engineers and technicians who have enriched world science by out-

Minsk University students, representing different countries, at the tree planted by Fidel Castro on Friendship Avenue

standing contributions are largely due to the fact that the Soviet higher school has been able to train highly skilled specialists.

TRAINING AND EDUCATION

The daytime departments of Soviet higher schools admit graduates of secondary general educational or special schools up to 35 years of age. The admissions are based on competitive examinations in 4-5 subjects equivalent to the secondary school programme (depending on the chosen speciality). Entrance privileges are granted to citizens with practical working experience in the chosen speciality and those sent to school by industrial enterprises, state and collective farms, and various institutions.

Close to 59 per cent of the total number of students admitted to the freshman year of daytime higher schools in 1962 had had more than two years' practical working experience, which is more than twice their 1957 number. In the 1960-61 academic year the daytime departments of higher schools admitted some 22,000 students (9 per cent of the total number) sent by various enterprises. All these students are paid an allowance by the enterprises that sent them. Upon graduation they will go back to their collectives as engineers or technicians. This mode of admission to Soviet schools of higher learning is becoming increasingly more popular.

The same requirements, except the age limit, govern admission to the correspondence and evening departments of higher schools. Entrance privileges are granted to persons working in occupations related to the chosen speciality.

Conditions necessary successfully to combine studies with work have been set up for students who attend school in off-work hours. These students are granted

additional 20-40 days' leave with pay (depending on the year of study) for laboratory work, tests and annual examinations, 30 days' additional leave with pay for the state (graduation) examinations and 4 months' additional leave with pay for preparing and defending the diploma work. The working week of these students is shortened by one day for 10 months preceding the beginning of their work on the diploma paper or the state examinations, the students being remunerated for this day by 50 per cent of the day's wages. The students may, upon request, be granted additional leave without pay at the time of the entrance, annual and state examinations.

The courses of studies in higher schools vary between 5 and 6 years, depending on the type of school and the speciality (in evening and correspondence schools the course of studies is 1-1.5 years longer).

The academic year is divided into two semesters; the first semester—September 1-January 23, the second—February 7-June 30. The last 3-4 weeks of each semester are devoted to examinations which are preceded by tests.

The curricula of the schools of higher learning comprise three basic cycles. For example, the curriculum of a higher technical school consists of a general scientific cycle which includes social sciences and economics, a general engineering cycle and a special cycle with approximately the following correlation of academic hours:

General scientific cycle—up to 40 per cent of the time, general engineering cycle—40-45 per cent of the time, and special cycle—15-20 per cent of the time. Thus the greater part of the curriculum consists of the general scientific and general engineering cycles which ensure training of highly educated specialists.

During the first 3.5-4 years the content of training is the same for all related specialities. During the final 1-1.5 years the curricula include, in addition to general

engineering subjects, subjects corresponding to specialities.

The training process in the Soviet schools of higher learning is conducted in the form of lectures, laboratory work, seminars, practical work, annual papers, annual projects, training and production practice, consultations, and diploma work or state examinations.

For students' production practice higher technical schools are attached to factories and other industrial enterprises of the same branch of industry. Higher agricultural schools have experimental and training farms. The students of higher medical schools do their practice in special clinics, students of higher pedagogical schools —in special teaching-practice schools and other educational institutions.

The 1958 Law has established in the practice of Soviet higher schools two forms of training which satisfy the requirement of combining education with socially useful labour—combining daytime training with production work and training without discontinuing work.

The first form envisages daytime training combined with production work in the course of which the students study according to the correspondence or evening system. The concrete types of this combination depend on the type of higher school, year of study and specialisation of the students. For example, in higher technical schools and schools of engineering economics daytime training is combined with correspondence or evening training for a period of 1-2 years during the first years of study and for 6 months during the last years. In the higher schools which train students in specialities connected with seasonal production (agriculture, road building, geology, etc.) daytime training is alternated at certain periods of time with work in production, on school experimental plots, state and collective farms, institutions, etc. The production practice and work of students

at working places and on regular staff jobs are arranged in strict conformity with the students' future specialities.

The second form includes correspondence training of specialists who continue working and some direct training during the period of laboratory work and examinations or, by request of the students, at any other time of the academic year. This form also includes evening training in which case work at industrial enterprises is combined with direct evening and daytime training, depending on the shift in which the students are engaged in production work.

At factory higher technical schools theoretical studies are alternated with work of the students all through the course of training. The system of training in evening higher schools is based on the same principles as that in the corresponding daytime schools.

The basic form of studies in correspondence schools of higher learning is the students' independent work. From the schools the correspondence students receive educational and methodological literature, written and oral consultations. They fill home assignments which are checked and rated by the teachers. Laboratory and examination sessions are held once a year; during these sessions the students work in laboratories and take tests and examinations. At the same time they attend lectures and consult teachers on their further work. The training consultation centres of most correspondence schools of higher learning are situated in various cities and at large industrial and agricultural enterprises. The consultation centres organise lectures, arrange laboratory work, give consultations, check on the control papers, test and examine the students.

The students who have passed their annual tests and examinations defend their diploma work, while those in universities and certain institutes prepare their diploma work and take their state (final) examinations. The state

examinations are taken and the diploma work is defended publicly before examination commissions consisting of teachers of the particular higher school and prominent specialists in the corresponding branches of the national economy. The results of the defence of the diploma work or state examinations are rated by a four grade system based, not only on the defence as such, but also on the review ratings of the diploma work.

Graduates of higher schools are given diplomas and are sent to work according to speciality.

Substantial changes in the training of senior students were introduced in recent years on the basis of the School Law. These changes have primarily affected production practice and the diploma work. Production practice is now taken at regular working places. The diploma work is for the most part (in some higher schools—more than 50 per cent) done in subjects which make a certain contribution to the national economy. Such diploma work, not only brings training closer to life, but, if utilised in the national economy, yields a considerable economic effect. This can be confirmed by the example from the experience of the Moscow Architectural Institute in which the staff of 48 professors and instructors, postgraduate and more than 100 senior students participated in an international contest for a project of an experimental residential area in the south-west of Moscow. This collective won first and second prizes in the contest in which designing organisations of 10 countries took part.

One of the objectives of the Soviet schools of higher learning is ideological education. An important part in this is played by Party, Komsomol, trade union and other public organisations functioning in them. These organisations help the students in their studies, in improving their labour discipline, promoting their social activities and forming their world outlook. They also

take care of the day-to-day needs of the students and conduct extensive cultural work among them.

Most senior students take part in the activities of students' scientific circles, societies, designing offices and other students' organisations supervised by professors and instructors.

The Soviet schools of higher learning publish numerous students' newspapers. There are scores of students' clubs, more than 10,000 amateur talent circles with some 200,000 students participating in their activities. Over 450,000 students engage in sports in the various sections of the Burevestnik Sports Society, while the total number of students taking part in physical culture activities exceeds 500,000. Students' health-building and athletic camps with extensive facilities for healthful and active recreation and rest have now become very popular.

The higher schools maintain numerous connections with the life of the whole country—students' labour assistance to agriculture and construction, participation in amelioration of towns and settlements, aid in promoting public order, organisation of lectures, concerts, etc. The professors and instructors participate in these activities side by side with the students.

The successful work of the Soviet schools of higher learning is largely facilitated by the fact that the state defrays a considerable part of the expenses connected with satisfying the students' material needs. Free tuition, state allowances for the overwhelming majority of students (more than 80 per cent, depending on their financial status), hostels for out-of-town students and lunchrooms facilitate the training of youth.

Highly skilled professors and instructors have developed in the process of construction of the Soviet school of higher learning. During the 1962-63 academic year the Soviet higher schools employed 179,500 professors,

assistant professors and instructors—30 times their 1914 number. The number of scientific workers in the schools of higher learning is continuously growing. About half the number of the scientific workers and teaching personnel have academic degrees and titles; there are 51,600 professors and assistant professors.

In 1962-63 school year the schools of higher learning and research institutions trained for scientific work 61,800 post-graduate students (of them 36,3[illegible] post-graduate students were trained in the higher [illegible]). The higher schools annually turn out between 6,000 and 8,000 young scientists.

Persons admitted for graduate studies must have working experience in the chosen speciality and ability for scientific endeavour. Admission for post-graduate studies directly after graduation from a higher school is allowed only in some theoretical disciplines. The tuition of post-graduate students is free. The latter are paid a monthly allowance of up to 100 rubles. They are also given an additional monthly allowance to purchase scientific literature. To earn a degree of Master of Science post-graduate students must pass a number of examinations and publicly defend a thesis.

The theses have to meet high requirements. The scientific councils of higher schools and research institutions admit to defence only theses which contain scientific and practical inferences and recommendations and reveal abilities of the candidates for academic degrees for independent scientific research and their profound theoretical and special knowledge. The scientific inferences stated and substantiated in a thesis must also be published in the form of articles in scientific or technical journals or in a separate edition before the public defence of the thesis.

All theses, wherever defended, are studied and confirmed by the Higher Certifying Commission (H.C.C.) of the U.S.S.R. Ministry of Higher and Special Secondary Education. Masters of Science have every opportunity to prepare and defend dissertations for the degree of Doctor of Science, which is conferred on scientists whose work makes a considerable contribution to science and practice.

More than 700 dissertations for the Doctor's degree and theses for the Master's degree are annually defended in the U.S.S.R.

SCIENTIFIC WORK IN SCHOOLS OF HIGHER LEARNING

Scientific work is also conducted by numerous departments of higher schools.

There is a wide network of research institutions in the U.S.S.R. Some of these institutions are in the system of the U.S.S.R. Academy of Sciences and the Academies of Sciences of the Union republics; others are under the jurisdiction of various ministries, state committees and departments. In 1962 the Soviet Union numbered 524,500 scientific workers (as against the 10,200 in 1914) of whom about 299,000 were doing scientific work in specialised research institutions and the others—in schools of higher learning.

The Soviet scientists have been given a task of great state importance, namely, to extend theoretical research in all fields of knowledge, to concentrate their efforts on elaboration of scientific problems of prime importance to the national economy and to apply the results of research to the national economy as rapidly as possible.

To provide the best conditions for research, a num-

ber of higher schools, the universities in the first place, had 32 research institutions and 178 problem laboratories in 1962. Moreover, various economic organisations established and maintained at their expense in higher schools 165 specialised laboratories conducting research in problems of interest to these organisations.

Many important theoretical and practical problems are successfully elaborated in the schools of higher learning. During the five years of 1957-61 alone 40 scientists working in higher schools were awarded the Lenin Prize which is given for outstanding contributions to science and engineering.

The scientists of a number of higher schools have established schools which have won universal recognition. Such are the scientific schools of Moscow, Leningrad, Kazan, Tomsk and Tashkent universities, the Moscow Aviation and Power institutes and Higher Technical School, the Urals and Kharkov polytechnical institutes, and many others. The scientists of the Moscow Higher Technical School have solved a number of intricate problems in the field of modern turbine construction, automation of production, new methods of welding and calculation of strength in mechanical engineering. The scientists of the Moscow Power Institute, Gorky University and Kiev Polytechnical Institute are successfully elaborating problems in radiophysics and electronics. Of great practical importance is the work in automation of the mining and metallurgical industries carried out by scientists of the Kharkov Mining and Urals Polytechnical institutes. The scientists of the Leningrad, Tomsk and Lvov Polytechnical institutes have developed a series of unique apparatus and installations. Interesting results in the chemistry of polymers have been obtained by scientists of the Moscow Chemical Technologi-

cal Institute, the Leningrad Technological Institute, and the Azerbaijan Oil Institute, Tashkent University and the Moscow Chemical Institute of Precision Technology. Moscow University and the Leningrad Polytechnical Institute have made a big contribution to the development of the theory and construction of computers.

Valuable scientific results were obtained by scientists of higher agricultural schools. For example, the scientists of the Kazakh Agricultural Institute have produced a new variety of spring wheat which yields 520 kilogrammes more per hectare than does the variety grown in Alma-Ata Region. The scientists of higher agricultural schools in the Central Asian republics are successfully solving problems connected with growing new varieties of cotton and are improving hydromelioration systems.

The scientists of the departments of social science have carried out a series of important investigations.

A notable contribution to philosophical science is the consummation of the collective research—*History of Philosophy* and the preparation of the *Philosophical Encyclopedia* and the work *Socialism and Communism*. In the field of economics Soviet scientists, many of whom are on the staffs of higher schools of economics, investigate problems of development of social production (theory and organisation of planning the national economy in the U.S.S.R., rates and proportions of socialist reproduction, etc.). Various concrete sociological problems are studied; the study of the problems of raising the cultural and technical standards of Soviet workers, carried out by scientists of Urals University in association with the Institute of Philosophy of the U.S.S.R. Academy of Sciences, may serve as an example.

The multi-volume collective work *World History* and the fundamental *History of the Great Patriotic War of the Soviet Union* are being completed, and multi-volume editions of the *History of the Communist Party of the*

Soviet Union and the *History of the U.S.S.R.* are being written. Works on the histories of the U.S.A., Argentina, Mexico, Poland, Czechoslovakia, Bulgaria and other countries have already made their appearance. Various topics in the fields of psychology and pedagogics are being investigated, and substantial scientific contributions have been made to philology, literary criticism, jurisprudence and other social sciences.

Since 1956 the U.S.S.R. Ministry of Higher and Special Secondary Education has annually examined and confirmed the plans for the most important scientific and experimental construction work agreed upon with the departments concerned, as well as the plans for introducing into the national economy the results of the research conducted by the higher schools under its jurisdiction. The other ministries which have schools of higher learning under their jurisdiction bear similar obligations.

The plans of Soviet higher schools for scientific research envisage participation of the staffs of the schools in carrying out a series of important studies, namely, elaboration of scientific principles of over-all mechanisation and automation of production, utilisation of the achievements of nuclear physics for peaceful purposes, research for new building materials, synthesis of new chemical substances, search for new antibiotics, etc. The plans also provide for extensive research in radioengineering of semi-conductors, development of computers and many other endeavours in various fields of science and engineering.

The studies carried out in 27 branches of science by scientists of the Soviet schools of higher learning are being published since 1957 in the following two journals: *Transactions of the Schools of Higher Learning* and *Scientific Reports of the Higher School.*

Particularly important at the present stage of development of science and engineering is improvement of long-term and current planning of scientific research. These functions have been assigned to the State Research Co-ordination Committee. The Committee supervises overall research, co-ordinates the scientific activities of the U.S.S.R. Academy of Sciences, the Academies of Sciences of the Union republics, the ministries, departments and higher schools, and helps in introducing the results of research into the national economy.

Extra-School Adult Education

In addition to the evening, secondary and higher schools, courses and schools of advanced training, which have already been discussed, the U.S.S.R. has other institutions which offer education to adults. All of them are aimed at satisfying the continuously growing cultural needs of the citizens.

SYSTEM AND CONTENT OF WORK IN INSTITUTIONS OF EXTRA-SCHOOL ADULT EDUCATION

The extra-school education of adults is organised by cultural and educational institutions of ministries of culture and trade unions, voluntary societies, the radio and television, youth organisations, etc. The system of Soviet cultural and educational institutions consists of clubs, palaces and houses of culture, houses of science and engineering, libraries, museums, cinemas, theatres, etc.

The ramified and flexible network of the Soviet cultural and educational institutions is continuously developing and improving. The number of various clubs has

increased more than 640-fold since the Revolution and in 1962 the figure was 126,900 (including some 23,000 collective-farm clubs). The system of the U.S.S.R. Ministry of Culture numbers nearly 80,000 palaces and houses of culture and other club-type institutions (about 75,000 of them are in rural areas), 88,300 libraries, nearly 120,500 projector units, some 2,000 recreation parks and a number of other cultural and educational institutions. The trade unions have more than 20,000 clubs, houses and palaces of culture, some 100,000 recreation and reading-rooms, 28,000 libraries, a large number of excursion and tourist bases and athletic institutions, and close to 1,000 gardens and recreation parks.

These institutions conduct multifarious activities among the country's adult population. They organise recreation parties, concerts, lectures, reports, talks and consultations on various problems of science, engineering, literature and the arts. For example, in 1960 close to 5 million lectures and reports were delivered to workers and other employees in trade union clubs and recreation and reading-rooms; the lectures and reports were attended by a total of more than 330 million people. All these activities are, as a rule, free of charge.

The club-type institutions of the U.S.S.R. Ministry of Culture have a large number of various amateur talent circles and studios. More than 300,000 different circles functioned in 1962, including 21,000 musical, 65,000 theatrical and 37,000 dance groups and 60,000 choirs. Close to 7 million people participate in the activities of these circles. There are nearly 9,600,000 members in the trade union amateur talent collectives. These collectives annually give about one million concerts and shows.

Particularly great is the cultural and educational role of libraries. In 1961 the U.S.S.R. numbered 382,000 libraries of different types, including 134,500 mass

libraries, with a book stock of 1,890 million volumes which is almost 10 times the 1913 stock. 35,400 of these libraries with a total stock of 462 million books were in towns and town-type settlements and 99,100 libraries with about an equal stock of books in rural areas. The book stocks of the mass libraries have increased in Soviet time almost 95-fold. Today the U.S.S.R. has one library for every 500 people.

Soviet libraries exchange books with those of many other countries. The Lenin State Library, the country's largest, exchanges books with libraries of some 80 countries. On July 1, 1962, the Lenin Library celebrated its 100th anniversary.

The 938 historical, technical, natural science, memorial, fine arts, literary, local lore and other museums constitute a large group of Soviet cultural and educational institutions. Of every 5 Soviet museums 4 were established in Soviet time. In addition to the state museums there are some 500 factory and collective-farm museums. In 1962 the museums were visited by close to 56 million people—50 per cent more than in 1940.

In 1962 there were 495 theatres in the Soviet Union presenting plays in more than 40 languages of the peoples of the U.S.S.R. The theatres had an attendance of some 94 million spectators.

During 1940-62 the number of projector units increased from 28,000 to 120,500; 100,800 of these are in rural areas.

An important part in raising the cultural standards of the people is played by various voluntary societies, especially the All-Union Znaniye (Knowledge) Society for the Dissemination of Political and Scientific Knowledge. It was founded in 1947 on the initiative of prominent scientists, public figures and workers of literature and the arts. Today this society numbers close to one million members. It is a mass organisation of the Soviet

One of the reading-rooms of the Lenin State Library, Moscow

intelligentsia uniting the 15 societies of the Union republics, more than 150 regional, territorial, district and republican branches and some 7,000 branches in town and country. There are about 65,000 groups of members of the society; 6,500 of these groups are in schools of higher learning and research institutes, some 6,000 groups at industrial enterprises and close to 53,000 groups on state and collective farms.

Lectures constitute the most important form of the society's activities. Close to 9 million lectures were delivered in 1963. The lectures covered various subjects: science, engineering, literature, the arts, social and political problems, etc., and were attended by more than 600 million people.

In addition to the lectures on various subjects, the society arranges cycles of lectures on certain problems, theoretical and production conferences, scientific consultations, etc. All these activities are organised at industrial enterprises for workers, on state and collective farms for the rural population, in offices for office workers, in schools for pupils and students, and in public halls for the general public. All of the society's activities are aimed at satisfying the interests of the different sections of the population. Most of the lectures (more than 85 per cent) are delivered by members of the society without remuneration.

One of the most important spheres of the society's activities is publication of popular science literature, shorthand records of lectures, visual aids and aids in scientific methods, and leaflets about foremost work experience. Close to 1,500 different booklets containing shorthand records of lectures with a circulation of about

At the inauguration concert of the Moscow People's Philharmonic Society

30 million copies in many languages of the peoples of the Soviet Union were published in 1961 alone. The society has its own publishing house—Znaniye (Knowledge)—which puts out books and pamphlets. Moreover, the Board of the society publishes monthly journals—*Science and Life, Science and Religion,* and *International Affairs.* The republican societies, as well as the regional and territorial branches, also publish literature.

Cultural and educational work among the population is also conducted by other voluntary societies; these include the Scientific and Technical Society, the All-Russian and republican pedagogical societies, the All-Russian Choral Society, and the U.S.S.R. Red Cross and Red Crescent Society.

Dissemination of scientific knowledge plays an important part in the cultural and political educational work conducted by the Komsomol. The Komsomol is doing this work in close association with the All-Union Znaniye Society, scientific and technical societies, houses of engineering, educational establishments, research institutes, schools and libraries, both orally and through the young people's press.

The radio and television are a powerful educational agency of the working people. Radio relay system in the U.S.S.R. serves more than 29 million subscribers. Broadcasting is conducted 24 hours a day in 102 languages, including 38 foreign languages.

In the process of construction of a communist society in the U.S.S.R. increasingly better conditions are created to enable the people engaged in socially useful labour to devote their leisure to the arts and sciences. This is considerably facilitated by the People's Universities and schools of culture which have come into existence on the people's own initiative.

The People's Universities offer knowledge in the musical, theatrical and fine arts, literature, science and engineering. They are an important agency of intellectual and aesthetic education of workers, collective farmers and the intelligentsia, and greatly contribute to training versatile and active members of society.

The greater part of the educational and organisational work in the People's Universities is done by representatives of the Soviet intelligentsia—scientists, engineers, physicians, artists, etc.—as a social duty, i.e., without remuneration.

In September 1962 the Russian Federation had more than 5,000 functioning People's Universities and schools of culture. Public-spirited citizens have taken over close to 600 permanent and 145,000 travelling libraries and some 2,000 bookshops and bookstalls and run them with-

Scene from *Othello* staged by the amateur theatre of the Siberian Agricultural Machinery Works club in Novosibirsk

out recompense. They are functioning in more than 200 clubs and in thousands of recreation and reading-rooms. Public travelling clubs and lecture bureaus have become very popular.

People's Universities of Culture, amateur theatres, amateur film studios and amateur philharmonic societies are new and very significant phenomena in the cultural life of the U.S.S.R. Millions of workers and peasants, not only enjoy the benefits of the arts and culture, but in increasingly greater measure contribute to the production of cultural values. Thus the words of Maxim Gorky, great Russian writer, are confirmed. He wrote: "The people are, not only the power that creates all material values; they are the only and inexhaustible source of spiritual values...."

An enormous part in the continuous cultural progress and in satisfying the spiritual needs of the Soviet peoples is played by the press.

More than 1,748,000 different books (a total of over 26,000 million volumes) have been published in the Soviet Union between 1918 and 1962. The circulation of the books published in 1962 amounted to 1,249 million volumes, i.e., 2.7 times that of pre-war 1940 and more than 12 times that of 1913. Some 4,055 journals with a total annual circulation of some 897 million copies were published in 1962. The annual circulation of the 9,754 newspapers published in the Soviet Union in 1962 exceeded 17,000 million copies. Scientific, educational and political literature and fiction are published in the U.S.S.R. in 94 languages, including 33 foreign languages.

The publication of books and periodicals has considerably increased since the end of the war in all the Union republics. From two to three times as many books were

Symphony orchestra of the People's Philharmonic Society at the Vyborg Palace of Culture in Leningrad

published in the Azerbaijan, Kirghiz, Turkmen and certain other Union republics in 1962 as in 1940.

The interests of Soviet readers greatly vary. Scientific and popular science literature is in great demand. Some 7,900 such books with a total circulation of 61,700,000 volumes, as well as over 11,000 books on social and political subjects with a circulation of 229 million volumes were published in 1961.

Works of Russian classical, Soviet and translated foreign fiction are published in even larger editions; in 1962 the total circulation of these books exceeded 354,000,000 volumes. Fiction is published in 59 languages of the peoples of the U.S.S.R. and 22 foreign languages.

Some 22,000 foreign books with a total circulation of 880 million volumes were translated and published in the U.S.S.R. between 1918 and 1962. These books were works of writers of 80 countries, the French literature leading with 4,881 books of 470 authors, the English following with 3,008 books of 267 authors, the American (U.S.A.) next with 2,983 books of 260 authors, etc.

During the last five years the publication of books has increased compared with the preceding five years 2.3-fold in the number of titles and 2.5-fold in circulation.

All that is done in the U.S.S.R. in education and culture serves to consummate the country's cultural revolution for which purpose all the working people must be drawn into developing society's spiritual life.

Prospects of Development of Education in the U.S.S.R.

Having built socialism the Soviet Union entered the period of extensive construction of communist society, which is characterised by unprecedented progress in the economy, culture and welfare of the people.

The Programme of the Communist Party of the Soviet Union adopted by the Twenty-Second Congress reads: "Communism is a classless social system with one form of public ownership of the means of production and full social equality of all members of society; under it, the all-round development of people will be accompanied by the growth of the productive forces through continuous progress in science and technology; all the springs of co-operative wealth will flow more abundantly and the great principle 'From each according to his ability, to each according to his needs' will be implemented. Communism is a highly organised society of free, socially conscious working people in which public self-government will be established, a society in which labour for the good of society will become the prime vital requirement of everyone, necessity recognised by one and all, and the ability of each person will be employed to the greatest benefit of the people."

According to the provisions of the Programme, in creating the material and technical basis of communism, the Soviet Union will, during the coming decade (1961-70), surpass the richest and most powerful capitalist country—the U.S.A.—in production per head of population. The material welfare and the cultural and technical standards of the working people will considerably rise and everybody will be well-to-do. All state and collective farms will become highly productive and highly profitable enterprises. The demand of Soviet people for well-appointed housing will, in the main, be satisfied, hard physical work will disappear, and the Soviet Union will have the shortest working day.

The material and technical basis of communism ensuring an abundance of material and cultural blessings for the entire population will be created during the following decade (1971-80); Soviet society will come close to realising the principle of distribution according to needs and will gradually effect the transition to one form of ownership—public ownership. Construction of a communist society in the U.S.S.R. will in the main be completed.

Extensive new changes will take place in the culture and education of the people. "Our country," N. S. Khrushchov emphasised at the Twenty-Second Congress of the Communist Party of the Soviet Union, "is at the final stage of the cultural revolution; the principal aim of this stage is to create all the necessary ideological and cultural prerequisites of communism, to raise the cultural and technical standards of all workers and peasants to those of the intelligentsia in order to eliminate, in the main, the essential differences between mental and physical work."

An important part at this stage will be played by the school and children's institutions. Further expansion of the network of catering establishments for children en-

visaged in the Programme will make it possible for increasingly more families (and during the second decade, every family) to keep their children (including adolescents) free of charge in children's institutions, if they so desire. The requirements in nursery schools, kindergartens, playgrounds and Young Pioneer camps will be fully satisfied. The network of free boarding-schools and prolonged-day schools with free meals will be considerably expanded.

Compulsory secondary education for all children of school age and incomplete secondary education for the youth working without the requisite education is to be carried into effect during the coming decade. Every Soviet citizen will have a guaranteed opportunity to receive a complete secondary education during the decade following.

The necessity of compulsory secondary general education is dictated by the objective course of communist construction. Development of the material and technical basis of communism envisages the country's complete electrification and, on this basis, perfection of engineering, the technology and organisation of social production, over-all mechanisation and automation of the production processes, greatest possible development of new and economically effective branches of production, and extensive utilisation of chemistry, and all forms of energy, materials and natural resources. All this, as well as the organic tie-up of science and production, and rapid scientific and technical advances require workers of high technical culture, with all-round general educational and special training.

The Programme of the Communist Party of the Soviet Union provides concrete measures for ensuring high standards of training and education of the rising generation: construction of school buildings, setting up of training workshops and study-rooms, production shops

at industrial enterprises, and favourable conditions for physical and aesthetic education of children and youth.

Further progress in science and engineering will necessitate reconsideration of the content of education. The pupils will acquire increasingly fuller knowledge of the latest scientific discoveries which they are able to understand.

The character of the training and educational process in the school will also gradually change. The strengthening of the link between school and life will require increasingly more independent work of the pupils, especially in the upper grades. In addition to the usual form of school work—lessons—excursions, observation, practice and labour assignments will play an even greater part. Programmed training and training machines, as well as films, the radio and television will be more widely used. The Programme of the Communist Party of the Soviet Union stipulates that one of the most important objectives is education—from the earliest possible age—of a physically strong rising generation with harmoniously developed physical and spiritual faculties. This requires every possible encouragement of all forms of mass sports and physical culture, including those in the school, and the drawing of increasingly broader sections of the population, especially the youth, into the physical culture movement.

The development of extensive athletic facilities, studios and children's clubs will make it possible to pose the problem of correlation between class and extra-class work in a different manner. It is planned, for example, to set apart one day a week for extra-class work —to be chosen by the pupils—in sports and physical culture, excursions and hikes through the native land, engineering, science and the arts.

The problem of further development of higher and special secondary education is now posed in a fundament-

ally new way. The shorter workday and considerable rise in the living standards of the entire population bring higher education within the reach of all who want to study.

Further development of the network of higher and secondary special schools, especially evening, correspondence, factory higher technical schools and agricultural institutes on the basis of large state and collective farms, is envisaged. By 1980 the number of students of higher schools is to be increased to 8 million. People's Universities and conservatoires, music and fine arts studios, Universities of Culture, etc., will be extensively developed.

An important part of this grand programme is the plan for the development of the national economy of the U.S.S.R. during 1959-65, which also contains concrete provisions for the development of education. The plan is being successfully fulfilled.

In 1964 the number of pupils in elementary and secondary schools has reached 44 million; the contingent of pupils in evening (shift) schools and schools for adults has also considerably increased. The number of pupils in boarding-schools has reached 2.4 million in 1964.

During 1959-65 the secondary technical and special schools will admit more than 4 million students.

Admission of more than 3 million students is planned to schools of higher learning during 1959-65. Some 2,300,000 specialists are to be trained by the higher school during this period (1,700,000 were trained during the preceding seven years). The greatest increase in the number of specialists being trained will take place in new technical specialities: chemical technology, automation, computing engineering, radioelectronics, etc. The powerful development of science and its increasingly greater application to production also require a considerable increase in the number of specialists in phys-

ics, mathematics, biology, chemistry and a number of kindred sciences.

During the current seven years the country's scientists will conduct extensive research in various fields of knowledge which are of particular theoretical and practical importance. The state is appropriating large funds for construction of new scientific establishments and higher schools and for supplying the institutes and laboratories with the up-to-date research equipment.

Increasingly more favourable conditions are being set up for extra-school adult education. Special attention is being devoted to establishment of various cultural and educational institutions in rural areas.

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In his address to the citizens of Russia four days after the victory of the Great October Socialist Revolution A. V. Lunacharsky, outstanding educator, appointed People's Commissar of Public Education, wrote: "In the field of education in a country where illiteracy and ignorance reign any truly democratic government must make a struggle against them its first and foremost aim.... But a true democracy cannot stop at mere literacy and universal elementary education.... Our ideal is an equal and highest possible education for all citizens."

The facts and figures cited in this book attest that the Soviet Union is coming closer to this ideal with each passing year.